IEEE International Conference on Signal, Information and Data Processing 2019
11-13 December, 2019  Chongqing, China

FINAL PROGRAM

Sponsors:
♦ IEEE Beijing Section
♦ Beijing Institute of Technology

Organizers:
♦ Beijing Institute of Technology
♦ Beijing Institute of Technology Chongqing Innovation Center

Co-organizers:
♦ National Key Lab of Microwave Imaging Technology, Chinese Academy of Sciences
♦ The 14th Research Institute of China Electronics Technology Group Corporation
♦ Chongqing Three Gorges University
♦ National Key Laboratory of Science and Technology on Test Physics & Numerical Mathematics
♦ Beijing Racobit Electronic Information Technology Co., Ltd
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Welcome Message from IEEE President

I’m Toshio Fukuda, 2019 IEEE President-Elect. It gives me great pleasure to welcome you to the IEEE International Conference on Signal, Information and Data Processing 2019 in Chongqing city. I know that the aim of this conference is to introduce the latest technological developments and academic research hot topics of signal processing technology, especially the latest research and applications of civilian signal processing technology. It’s fantastic to know so many esteemed experts and technicians across signal processing to attend this conference. I’m sure you’ll agree that the next few days will be unique in providing opportunities for subject-matter experts like yourselves to exchange achievements, views and ideas with peers.

IEEE is the world’s largest technical professional organization dedicated to advancing technology for the benefit of humanity. It is designed to serve professionals involved in all aspects of the electrical, electronic, and computing fields and related areas of science and technology that underlie modern civilization. IEEE and its members inspire a global community through its highly cited publications, conferences, technology standards, and professional and educational activities. We offer membership to individuals from a range of engineering disciplines, sectors and interests. And as a multidisciplinary institution we reflect the increasingly diverse nature of engineering in the 21st century. By inspiring both today’s and tomorrow’s engineers and technologists to drive innovation, it will ultimately benefit society.

We publish the best research work that is coming out of China and we support the professional development of Chinese students – helping them become ready for the world of work and giving them international exposure. We also run a range technical conferences aimed at bringing the best researchers and engineers together – we are always looking for topic ideas that address the latest challenges so it is a great pleasure to be one of the sponsors for this well respected event.

It has been a great pleasure to work with the Beijing Institute of Technology to organize this event – this is the first time working with you on the Signal, Information and Data Processing Conference. I’d also like to thank the other sponsors, technical sponsor and co-organizers who have all worked hard to ensure it is a great success. It’s fantastic to see so many signal processing experts and technicians attending and I’m sure that the outcomes of the next few days will benefit the developments of this field – I know there will be some excellent discussions.

Prof. Toshio Fukuda
Academician of Engineering Academy of Japan
Foreign Academician of Chinese Academy of Sciences
President of IEEE 2020
Honorary Chair of IEEE ICSIDP 2019
Welcome Message from BIT President

IEEE International Conference on Signal, Information and Data Processing 2019 is jointly sponsored by IEEE Beijing Section and Beijing Institute of Technology. Today, it is successfully held in Chongqing, China. As the President of Beijing Institute of Technology and one of the Honorary Chairs of this conference, I sincerely congratulate the opening of this great event.

In today's world, a new round of technological revolution represented by information technology is rising, and the information technology innovations such as signal, information, and data processing are changing with every day. The development of information technology is profoundly changing people's modern production and life style. Signal, information and data processing technologies are still playing the continuously important role in traditional technical fields such as radar, communication, remote sensing, audio, and image processing. At the same time, they are providing the development sources for research in emerging fields such as artificial intelligence, biomedicine, the Internet of Things and big data. They will provide technical guarantee and support for the development of scientific and technological innovation and the improvement of human living standards. This conference will promote the development of signal, information, and data processing technology, and facilitate the development, application and integration of information technology in emerging disciplines and technological innovations.

Beijing Institute of Technology (BIT) has always been devoted to the economic and social development of China and the technical progress of human since its establishment in 1940. BIT insists on aiming at the development frontier of the world's science and technology, and contributes to the promotion of technological development in related fields, the improvement of people's livelihood and the well-being of all humankind with worldwide scholars. As the host of this conference, we will certainly make every effort to do the careful organization and arrangements to make the conference successful.

Finally, I wish this conference a complete success! I also wish the experts, scholars and friends all the best in Chongqing! I sincerely invite you to visit BIT and Chongqing Innovation Center of BIT for further communication when you are convenient.

Prof. Jun Zhang
Academician of Chinese Academy of Engineering
President of Beijing Institute of Technology
Honorary Chair of IEEE ICSIDP 2019
Welcome Message from General Chair

It is our great pleasure to welcome you to this historical city of China – Chongqing – to participate in IEEE International Conference on Signal, Information and Data Processing 2019. This international conference is jointly sponsored by IEEE Beijing Section and Beijing Institute of Technology. This conference aims to provide a platform for signal processing experts and technicians to exchange ideas and achievements by introducing the latest technological development and academic research hot issues of the signal processing technology.

This conference is organized by Beijing Institute of Technology (BIT) and Chongqing Innovation Center of BIT. The co-organizers include National Key Lab of Microwave Imaging Technology, Chinese Academy of Sciences, the 14th Research Institute of China Electronics Technology Group Corporation, Chongqing Three Gorges University, National Key Laboratory of Science and Technology on Test Physics & Numerical Mathematics, and Beijing Racobit Electronic Information Technology Co., Ltd. We would like to thank the technical co-sponsors, Overseas Expertise Introduction Center for Discipline Innovation of Novel Radar Theory and Key Technology, Key Laboratory of Electronic and Information Technology in Satellite Navigation, Ministry of Education, Beijing Key Laboratory of Embedded Real-Time Parallel Processing Technology, China Hi-Tech Industrialization Association Intelligent Information Processing Industrialization Branch, China Radar Industry Association, National Nature Science Foundation of China, The Institution of Engineering and Technology (IET), Young Scientists Club of CIE, Signal Processing Society of CIE, and Radar Society of CIE, for their strong support to this conference. We would also express appreciation to all authors including those whose papers were not accepted. We thank keynote and tutorial speakers for sharing their unique insight into their professional specific areas. Special thanks to the Technical Program Committee for reviewing and selecting the excellent papers as well as other support and expertise.

As you know, Chongqing is the biggest city in China in terms of area and population, one of four municipalities in China. Chongqing is called as “Mountain city”, which is a popular destination for travelers with its hilly slopes, rivers, night views and spicy food. It is also well known for the ancient Three Kingdom culture and Three Gorges culture. On behalf the entire organizing committee, our technical sponsors and supporters, we hope you participate in passionate discussions, exchange ideas and enjoy IEEE International Conference on Signal, Information and Data Processing 2019 and enjoy your stay in Chongqing.

Prof. Teng Long
IEEE Fellow
Vice President of Beijing Institute of Technology
General Chair of IEEE ICSIDP 2019
Welcome Message from
Technical Program Committee Chair

On behalf of the Technical Program Committee, I would like to welcome you to the IEEE International Conference on Signal, Information and Data Processing 2019 (IEEE ICSIDP 2019). This conference aims to introduce the latest technological development and academic research hot issues of Signal, Information and Data processing, as well as their applications, and provide a platform for leading industrial and academic researchers to present their state-of-the-art accomplishment, discuss and share their experiences, and foresee future directions in the field of signal processing theories and applications.

All submitted papers to this conference were reviewed by the technical program committee, and thoroughly peer-reviewed by experts based on originality, significance and clarity. Finally, 134 papers were selected for oral presentation and 515 papers for interactive poster presentation. This conference is honored to feature 12 keynote speeches, 6 tutorials and 82 invited talks from distinguished experts which will share with us their latest research result and their insight to the future signal processing development. Throughout three conference days, the 35 oral presentation sessions and 16 parallel poster presentation sessions will be given. To our pleasure, the selected papers and invited talks cover a wide range of Audio, Acoustic and Sonar processing, Image, Video, and Multimedia Processing, Communications and Networks, Remote Sensing, Sensor Array and Radar System, AI Theory and Applications, and Signal Processing of Big Data, Novel Quantum/Terahertz Technology, Biomedical Signal Processing, The Internet of Things, GNSS Signal Processing and Positioning, Joint Wireless Communication and Radar Sensing, etc.

I would like to express my thanks to all the authors for their outstanding contributions. In particular, I would like to send my appreciation to all technical program committees for their hard work and contribution to the conference. I wish IEEE ICSIDP 2019 a great success and look forward to seeing you in Chongqing.

Prof. Xiaopeng Yang
Board of Governors of IEEE AESS
Professor of Beijing Institute of Technology
TPC Chair of IEEE ICSIDP 2019
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Layout of Conference Venue

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<td>Tutorial 2, Prof. Yvon Savaria, Hardware Support Architectures and Implementations for Effective Embedded AI and Signal Processing</td>
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<td>Keynote Speech 2, Prof. Teng Long, On-board Signal and Information Processing for Remote Sensing Satellites</td>
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<td>10:30-11:15</td>
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<td>Oral Session 1, Photon/Quantum Communications Chairs: Xiangdong Zhang, Baosen Shi</td>
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<td>Oral Session 2, Applications and Services based on Big Data Chairs: Chi Liu, Yin Zhang</td>
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<td>16:00-18:00</td>
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<td>Audio and Acoustic Systems Analysis and Algorithms</td>
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<td>Prof. Kai-Bor Yu, Advanced Monopulse Processing of Phased Array Radar</td>
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<td>10:00-10:30</td>
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<td>Keynote Speech 7 Prof. Shipeng Li, Challenges and Opportunities in Massive Applications of Artificial Intelligence Technologies</td>
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<td>16:30-18:30</td>
<td><strong>Poster Session 7</strong> Photon / Quantum Signal and Information Processing</td>
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<td><strong>Poster Session 8</strong> Joint Wireless Communication and Radar Sensing</td>
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</table>
| 16:30-18:30  | **Oral Session 19** Statistical Signal Processing  
Chair(s): Jinwen Ma, Wei Li |                                                                          | Room 4-2 |
| 16:30-18:30  | **Oral Session 20** Remote Sensing Target Detection II  
Chair(s): Yachao Li, Yongzhen Li |                                                                          | Room 2-1 |
| 16:30-18:30  | **Oral Session 21** Sparse Array & Signal Processing  
Chair(s): Hai Liu, Yingsong Li |                                                                          | Room 1  |
| 16:30-18:30  | **Oral Session 22** GNSS Signal Processing and Positioning  
Chair(s): Gérard Lachapelle, Tao Lin |                                                                          | Room 4-3 |
| 16:30-18:30  | **Oral Session 23** Neural Network Design & Implementation  
Chair(s): Li Du, Yupei Wang |                                                                          | Room 4-1 |
| 16:30-18:30  | **Oral Session 24** Remote Sensing Data Processing  
Chair(s): Tao Zeng, Yong Wang |                                                                          | Room 2-2 |
| 18:30-19:30  | **Dinner**                                                                     |                                                                          | Aqua Cafe |
| 19:30-22:00  | **Tutorial 5**  
Prof. Gérard Lachapelle, GNSS Precise Point Positioning with Android Smartphones and Comparison with High Performance Receivers |                                                                          | Room 1  |
| 19:30-22:00  | **Tutorial 6**  
Prof. Tapan K. Sarkar, Use of the Fractional Fourier Transform for Radar Target Identification Using the Singularity Expansion Method |                                                                          | Room 2  |
| 08:30-18:30  | **Exhibition Time**                                                            |                                                                          | Foyer   |
| 08:00-18:00  | **Registration**                                                               |                                                                          | Hotel Lobby |
| 08:00-18:00  | **Oral Session 25** Target Detection in Acoustic Systems  
Chair(s): Xiaojun Qiu, Xueli Sheng |                                                                          | Room 4-2 |
| 08:00-18:00  | **Oral Session 26** Remote Sensing Intelligence Processing  
Chair(s): Turgay Celik, Junjie Wu |                                                                          | Room 2-1 |
| 08:00-18:00  | **Oral Session 27** Target Localization and DOA Estimation  
Chair(s): Xiaoping Zhang, Quanhua Liu |                                                                          | Room 2-2 |
| 08:00-18:00  | **Oral Session 28** Signal Processing Algorithm Implementation  
Chair(s): Lianlin Li, Yin Zhuang |                                                                          | Room 4-3 |

**December 22 Thursday**

**December 13 Friday**
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<td>10:00-10:30</td>
<td>Oral Session 29</td>
<td>Waveform Design and Application Chairs: Ningbo Liu, Wei Li</td>
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<td>Oral Session 30</td>
<td>Civilian Radar Chairs: Gang Li, Julien Le Kernec</td>
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<td>10:30-12:30</td>
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<td>Remote Sensing System Techniques Chairs: Jie Chen, Qian He</td>
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<td>Bio-imaging and Biomedical Signal Processing Chairs: Zeyang Xia, Wenbin Shi</td>
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<td>Communications and Networks II Chairs: Chengwen Xing, Wenchi Cheng</td>
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<td>12:30-13:00</td>
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<td>Lunch</td>
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<td>14:15-15:00</td>
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<td>Prof. Xiaojun Qiu, Virtual Sound Barriers and their Applications</td>
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<td>15:00-15:30</td>
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<td>15:00-16:00</td>
<td>Poster Session 9</td>
<td>Remote Sensing and Signal Processing II</td>
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<td>Bio-imaging and Biomedical Signal Processing</td>
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<td>Signal Processing Theory and Methods</td>
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<td>Poster Session 15</td>
<td>GNSS Signal Processing and Positioning</td>
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<td>Keynote Speech 11</td>
<td>Prof. Caiming Qiu, Toward Theoretical Understanding of Deep Learning</td>
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<td>Keynote Speech 12</td>
<td>Prof. Ke Wu, Future Wireless – Game-Changing Technology for Everything</td>
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<td>18:30-21:30</td>
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*Function Room 1/多功能厅1: B, 2nd Basement of Hotel (B2 of Hotel)*
*Function Room 2-1/多功能厅2-1: C1, 2nd Basement of Hotel (B2 of Hotel)*
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*Function Room 4-1/多功能厅4-1: E, 1st Basement of Hotel (B1 of Hotel)*
*Function Room 4-2/多功能厅4-2: F, 1st Basement of Hotel (B1 of Hotel)*
*Function Room 4-3/多功能厅4-3: G, 1st Basement of Hotel (B1 of Hotel)*
*Crowne Grand Ballroom-1/皇冠大宴会厅-1: A1, 2nd Basement of Hotel (B2 of Hotel)*
*Crowne Grand Ballroom-2/皇冠大宴会厅-2: A2, 2nd Basement of Hotel (B2 of Hotel)*
*Crowne Grand Ballroom-3/皇冠大宴会厅-3: A3, 2nd Basement of Hotel (B2 of Hotel)*
*Foyer/走廊: 2nd Basement of Hotel (B2 of Hotel)*
## Oral Sessions Schedule at a Glance

### 13:30 – 15:30, December 11

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<th>Place&amp;Time</th>
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<td>Nan Wu</td>
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<td>Hua Huang</td>
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### 16:00 – 18:00, December 11

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### 13:30 – 15:30, December 12

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**Please note:**
The name listed in the table is the speaker of invited talk.
The number listed in the table is the paper ID of oral presentation.
Title: Bio-Imaging Driven by Big Data and Deep Learning  
Speaker: Prof. Ge Wang, Rensselaer Polytechnic Institute, USA  
Time: 08: 30 – 09: 15, December 11, 2019  
Place: Crowne Grand Ballroom, B2 of Hotel

Abstract: Currently, deep learning is the mainstream of machine learning and a most active area of artificial intelligence. Computer vision and image analysis are great application examples of deep learning. While computer vision and image analysis deal with existing images and produce related features (registration, segmentation, classification, etc.), tomography produces images of internal structures from externally measured features (line integrals, k-space samples, etc.) of underlying images. Recently, deep learning techniques are being actively developed worldwide for tomographic image reconstruction. We believe that “image reconstruction is a new frontier of machine learning” (IEEE Transactions on Medical Imaging 37 (2018) 1289), and promises major impacts on the development of solutions to many inverse problems. Over the past years, we have been working on data-driven bio-imaging, especially CT, MRI, and optical image reconstruction algorithms for superior imaging performance. In this presentation, we report our representative results, involving important applications and methodological innovations. We welcome collaborative opportunities.

Biography: Ge Wang is Clark & Crossan Endowed Chair Professor and Director of Biomedical Imaging Center, Rensselaer Polytechnic Institute, Troy, NY, USA. He published the first spiral/helical cone-beam/multi-slice CT algorithm in 1991 and since then 100+ papers systematically contributed to theory, algorithms, artifact reduction and biomedical applications in this area. Currently, there are 100+ million medical CT scans yearly with a majority in the spiral/helical cone-beam/multi-slice mode. His group developed interior tomography theory and algorithms to solve the long-standing “interior problem” for high-fidelity local reconstruction, and enable omni-tomography (“all-in-one”) with CT-MRI as an example. He initiated the area of bioluminescence tomography. He wrote 450+ journal publications, receiving a high number of citations and academic awards. His results were featured in Nature, Science, PNAS, and various news media. In 2016, he wrote the first perspective on neural-network-based tomographic imaging as the new frontier of machine learning. His team has been in collaboration with world-class groups and continuously well-funded by federal agencies and major imaging companies, actively translating machine learning techniques into imaging products. His interest includes x-ray CT, MRI, optical tomography, multimodality fusion, and machine learning. He is Lead Guest Editor of five IEEE Transactions on Medical Imaging Special Issues, Founding Editor-in-Chief of International Journal of Biomedical Imaging, Outstanding Associate Editor of IEEE Trans. Medical Imaging, Board Member of IEEE Access, Associate Editor of IEEE Trans. Radiation and Plasma Medical Sciences, Medical Physics, and Editorial Board Member of Journal of Machine Learning Science and Technology. He is Fellow of IEEE, SPIE, OSA, AIMBE, AAPM, and AAAS.
Title: On-board Signal and Information Processing for Remote Sensing Satellites
Speaker: Prof. Teng Long, Beijing Institute of Technology, China
Time: 09:15-10:00, December 11, 2019
Place: Crowne Grand Ballroom, B2 of Hotel

Abstract: With the development of remote sensing technology, the Earth observation satellites have the characteristics of high resolution, wide coverage and multi-satellite network. So the acquired data grows geometrically, which brings severe challenges to the transmission, storage and processing of satellite data. On-board real-time processing technology is an effective means to solve these problems. Based on this technology, the data processing is completed within the satellite, such as interest region extraction, target detection and recognition, etc. Then the processing results can be directly transmitted to the users through broadcast downlink. The information acquisition delay can be reduced from hours to minutes. Because of the on-board processing technology, the application efficiency will be greatly improved, such as in the situations of emergency, disaster reduction and national security.

This Keynote firstly expounds the development of Earth observation remote sensing satellites. And then, the significance and the technology development of the on-board real-time processing are introduced. Secondly, the technology difficulties and solving methods of on-board processing for optical or SAR payload are discussed. Finally, the development of the technology is prospected.

Biography: Prof. Teng Long received the B.S. degree from University of Science and Technology of China (USTC) in 1989, and the Ph.D. degree from Beijing Institute of Technology (BIT) in 1995. After graduation he joined the faculty of BIT, where he became a full professor in 2002. He was a visiting scholar at Stanford University and University College London in 1999 and 2002 respectively. Currently, he serves as the Vice President of BIT. He is a Fellow of IEEE, IET and the Chinese Institute of Electronics (CIE). He is the president of CIE Signal Processing Society and vice president of CIE Radar Society. His research interests include the fundamental and significant issues of the novel radar system and signal processing. His work includes the novel one-dimensional high resolution imaging radar, two-dimensional synthetic aperture imaging radar and the new technology and application of the real-time signal processing technology in remote sensing observation.
Title: Big Graph Processing: Applications, Challenges, and Advances
Speaker: Prof. Xuemin Lin, the University of New South Wales, Australia
Time: 10:30-11:15, December 11, 2019
Place: Crowne Grand Ballroom, B2 of Hotel

Abstract: Graph data are key parts of Big Data and widely used for modelling complex structured data with a broad spectrum of applications. Over the last decade, tremendous research efforts have been devoted to many fundamental problems in managing and analysing graph data. In this talk, I will cover various applications, challenges, and recent advances. We will also look to the future of the area.

Biography: Xuemin Lin is a UNSW Scientia Professor, the head of data and knowledge research group in the school of computer science and engineering at UNSW, and an adjunct Professor at ECNU, Fudan University, and Guangzhou University. He is a fellow of IEEE. Xuemin's research interests lie in databases, data mining, algorithms, and complexities. Specifically, he is working in the areas of scalable processing and mining of large scale data, including graph, spatial-temporal, streaming, text and uncertain data.

Xuemin has been very frequently serving as a PC member and area chairs (senior PC members) in SIGMOD, VLDB, ICDE, ICDM, KDD, CIKM, and EDBT. He received the honour of outstanding reviewer in KDD2012. He was an associate editor of ACM TODS (2008-2014) and IEEE TKDE (Feb 2013- Jan 2015), and an associate editor-in-Chief of TKDE (2015-2016), respectively. Currently, he is the editor-in-Chief of TKDE (Jan 2017 - now) and an associate editor of WWW Journal (2013 - now).
Abstract: Ground Penetrating Radar (GPR) is a typical near-range radar, and the interaction of antenna with radar targets is important in the radar performance. In this keynote speech, I will introduce a few examples how antenna design, signal processing directly contribute the radar performance. And I will demonstrate our works on advanced signal processing in GPR which include soil moisture estimation. Then we will also discuss about GB-SAR system based on MIMO radar and its signal processing.

Biography: Motoyuki Sato received the Dr. Eng. degree in information engineering from the Tohoku University, Sendai, Japan. Since 1997 he is a professor at Tohoku University.

His current interests include transient electromagnetics and antennas, radar polarimetry, ground penetrating radar (GPR), borehole radar, electromagnetic induction sensing, interferometric and polarimetric SAR.

He was the technical chair of International conference on Ground Penetrating Radar, GPR96 held in Sendai, Japan and he served the general chair of IGARSS2011. He received 2014 Frank Frischknecht Leadership Award from SEG for his contribution to his sustained and important contributions to near-surface geophysics in the field of ground-penetrating radar.
Title: Person Re-Identification: Challenges and Recent Advances
Speaker: Prof. Qi Tian, University of Texas at San Antonio, USA
Time: 08:30-09:15, December 12, 2019
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel

Abstract: As a research topic attracting more and more interests in both academia and industry, person Re-Identification (ReID) targets to identify the re-appearing persons from a large set of videos. It is potential to open great opportunities to address the challenging data storage problems, offering an unprecedented possibility for intelligent video processing and analysis, as well as exploring the promising applications on public security like cross camera pedestrian searching, tracking, and event detection.

This talk aims at reviewing the latest research advances, discussing the remaining challenges in person ReID, and providing a communication platform for researchers working on or interested in this topic. This talk includes several parts on person ReID:
- Task definition, challenges and benchmarks of person ReID
- Fully supervised learning for person ReID
- Unsupervised learning or weakly supervised learning for person ReID
- Open issues and promising research topics of person ReID

This talk also covers our latest work on person ReID, as well as our viewpoints about the unsolved challenging issues in person ReID. We believe this talk would be helpful for researchers working on person ReID and other related topics.

Biography: Qi Tian is currently a Chief Scientist in Computer Vision at Huawei Noah’s Ark Lab. He was a Full Professor in the Department of Computer Science, the University of Texas at San Antonio (UTSA) from 2002 to 2019. During 2008-2009, he took one-year Faculty Leave at Microsoft Research Asia (MSRA). Dr. Tian received his Ph.D. in ECE from University of Illinois at Urbana-Champaign (UIUC) and received his B.E. in Electronic Engineering from Tsinghua University and M.S. in ECE from Drexel University, respectively. Dr. Tian’s research interests include computer vision, multimedia information retrieval and machine learning and published over 510 refereed journal and conference papers. His Google citation is over 17200+ with H-index 65. He was the co-author of best papers including IEEE ICME 2019, ACM CIKM 2018, ACM ICMR 2015, PCM 2013, MMM 2013, ACM ICIMCS 2012, a Top 10% Paper Award in MMSP 2011, a Student Contest Paper in ICASSP 2006, and co-author of a Best Paper Candidate in ACM Multimedia 2019, and a Best Paper/Student Paper Candidate in ICME 2015 and PCM 2007. Dr. Tian research projects were funded by ARO, NSF, DHS, Google, FXPAL, NEC, SALS1, CIAS, Akiira Media Systems, HP, Blippar and UTSA. He received 2017 UTSA President’s Distinguished Award for Research Achievement, 2016 UTSA Innovation Award, 2014 Research Achievement Awards from College of Science, UTSA, 2010 Google Faculty Award, and 2010 ACM Service Award. He is the associate editor of IEEE TMM, IEEE TCSVT, ACM TOMM, MMSJ, and in the Editorial Board of Journal of Multimedia (JMM) and Journal of MVA. Dr. Tian is the Guest Editor of IEEE TMM, Journal of CVIU, etc. Dr. Tian is a Fellow of IEEE(2016).
Title: Deep Texture Analysis: An answer to why CNN goes with experts’ scores, not the pathological reports
Speaker: Prof. Jerome Zhengrong Liang, State University of New York at Stony Brook, USA
Time: 09:15-10:00, December 12, 2019
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel

Abstract: Artificial intelligence (AI) research for medical diagnosis started soon after human began to use computer, initially called artificial neural network (ANN) and now convolutional neural network (CNN). ANN has been mainly explored to classify the experts’ handcrafted features from the raw images, while CNN adds a component to extract the features from the raw images.

Experimental evidences have shown that CNN can be trained by a large number of the raw images with experts’ scores (or labels) to march or even surpass the experts’ performance for both non-medical and medical diagnosis applications. However, the performances of both the CNN models and the experts on medical diagnosis dropped dramatically when the labels of the raw images were replaced by the medical pathological reports.

Accumulated medical knowledge reveals that the lesion heterogeneity is a footprint of lesion evolution and ecology, and the heterogeneity is also an indicator of lesion progress and response to intervention. The heterogeneity can be reflected by the image contrast distribution (or texture patterns) across the lesion volume. Image textures have been shown as an effective descriptor of the lesion heterogeneity for computer-aided diagnosis.

Can we go into the raw images to map the image contrast distribution into texture images and train CNN to learn from the texture images? This question is the central theme of this presentation with application to CT colonography or virtual colonoscopy, i.e. from AlphaGo to AlphaPolyp.

Biography: Jerome Zhengrong Liang gained a Ph.D. degree in Physics from City University of New York in 1987, followed by one year Research Fellow in Nuclear Medicine and Radiation Oncology at Albert Einstein College of Medicine. He had been a Research Associate and then Assistant Professor in Radiology at Duke University Medical Center. He joined State University of New York at Stony Brook (SUNY-SB) in 1992 and currently holds a Professorship in the Departments of Radiology, Biomedical Engineering, and Electrical & Computer Engineering. He was a co-founder of the Program in Biomedical Engineering at SUNY-SB. His primary research interests in medical imaging include data acquisition geometry, image formation and processing methodology, and feature-based visualization and computer-aided detection and diagnosis. He has authored more than 400 scientific publications, 20 US patents, 45 invited talks, and 170 conference presentations. He has supervised more than 25 postdoctoral researchers and more than 40 graduate students (PhD and MS degrees). He has been served principal investigator (PI) for 11 NIH projects and Co-PI for four NIH projects. He received the State University of New York Chancellor's Entrepreneur Award for “whose invention has led to the startup of a company to commercialize the product” in 2002. He was elected Fellow to the IEEE for “contributions to medical image reconstruction and virtual colonoscopy” in 2007.
Title: Challenges and Opportunities in Massive Applications of Artificial Intelligence Technologies
Speaker: Prof. Shipeng Li, IFLYTEK CO., LTD., China
Time: 10:30-11:15, December 12, 2019
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel

Abstract: In this talk, Dr. Li will first introduce different levels of artificial intelligence from a data perspective and give an honest estimation on the timeframe to reach each level of AI. He will then give an overview of the state-of-the-art AI technologies and some exciting applications enabled by AI using some industrial examples. He will then go ahead to analyze the challenges and opportunities we are facing today for massive applications of AI technologies in real world. He will also point out research directions and solutions to some of the pressing issues we are facing today.

Biography: Dr. Shipeng Li is Associate Director of Shenzhen Institute of Artificial Intelligence and Robotics for Society (AIRS). He was with a leading AI company in China serving as Corporate Vice President and Co-President of Research. Before that he was CTO of a leading IoT company in China. He was a founding member of Microsoft Research Asia (MSRA). Dr. Li was once a Research Area Manager and Principal Researcher at MSRA, and a Microsoft Partner in 1999-2015. Before Microsoft, Dr. Li was with Sarnoff Corporation as Member of Technical Staff.

Dr. Li is the Editor-in-Chief of IEEE Transactions on Circuits and Systems for Video Technology, a Fellow of IEEE, and IEAS (International Eurasian Academy of Science) Academician. He is an influential expert on multimedia, internet, computer vision, cloud computing, IoT and artificial intelligence, holding 200 US patents and 330+ international technical publications with 21,879+ citations (H-index: 76). He has trained 4 MIT TR35 winners (the world's top 35 innovators under the age of 35) over the years. He serves as a Standing Committee Member of Chinese Institute of Electronics, Co-Founder and Joint Secretary General of Artificial Intelligence Industry Technology Innovation Strategic Alliance under China MOST.

Dr. Li received B.S. and M.S. from University of Science and Technology of China and Ph.D. from Lehigh University.
Title: Deep Learning for Audio Classification  
Speaker: Prof. Wenwu Wang, University of Surrey, UK  
Time: 11:15-12:00, December 12, 2019  
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel  

Abstract: Audio classification (e.g. audio scene analysis, audio event detection and audio tagging) have a variety of potential applications in security surveillance, intelligent sensing for smart homes and cities, multimedia search and retrieval, and healthcare. This research area is under rapid development recently, having attracted increasing interest from both academia and industrialists. In this talk, we will present some recent and new development for several challenges related to this topic, including data challenges (e.g. DCASE challenges), acoustic modelling, feature learning, dealing with weakly labelled data, and learning with noisy labels. We will show some latest results of our proposed algorithms, such as the attention neural network algorithms for learning with weakly labelled data, and their results on AudioSet – a large scale dataset provided by Google, as compared with several baseline methods. We will also use some sound demos to illustrate the potentials of our proposed algorithms.

Biography: Wenwu Wang is a Professor in Signal Processing and Machine Learning, and a Co-Director of the Machine Audition Lab within the Centre for Vision Speech and Signal Processing, University of Surrey, UK. He is also a Guest Professor at Qingdao University of Science and Technology, China.

He received the B.Sc. degree in 1997, the M.E. degree in 2000, and the Ph.D. degree in 2002, all from the College of Automation, Harbin Engineering University, China. He worked in King’s College London (2002-2003), Cardiff University (2004-2005), Tao Group Ltd. (now Antix Labs Ltd.) (2005-2006), Creative Labs (2006-2007), and University of Surrey (since May 2007). He was a Visiting Scholar at Ohio State University, USA, in 2008. His current research interests include blind signal processing, sparse signal processing, audio-visual signal processing, machine learning and perception, artificial intelligence, machine audition (listening), and statistical anomaly detection. He has (co)-authored over 250 publications in these areas.

He and his team have won the Reproducible System Award on DCASE 2019, Best Student Paper Award on LVA/ICA 2018, the Best Oral Presentation on FSDM 2016, the Top-Quality Paper Award in IEEE ICME 2015, Best Student Paper Award finalists on ICASSP 2019 and LVA/ICA 2010. He and his team have achieved the 1st place (among 35 submitted systems) in the 2017 DCASE Challenge on "Large-scale weakly supervised sound event detection for smart cars", the 3rd place (among 558 submissions) on the 2018 Kaggle Challenge on "Freesound General-Purpose Audio Tagging", the TVB Europe Award for Best Achievement in Sound in 2016, the finalist for GooglePlay Best VR Experience in 2017, and the Best Solution Award on the Dstl Challenge "Under-sampled Signal Recognition" in 2012.

He has been a Senior Area Editor (2019-) and Associate Editor (2014-2018) for IEEE Transactions on Signal Processing. He is an Associate Editor (2019-) for EURASIP Journal on Audio Speech and Music Processing. He was a Publication Co-Chair for ICASSP 2019, Brighton, UK, and will serve as Tutorial Chair for ICASSP 2024, Seoul, South Korea. He also serves as a Member (2019-) of the International Steering Committee of Latent Variable Analysis and Signal Separation.
Title: Low-Rank and Sparse Representations in Signal Processing  
Speaker: Prof. James E. Fowler, Mississippi State University, USA  
Time: 13:30-14:15, December 13, 2019  
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel

Abstract: Many signal-processing problems of current interest can be cast as the separation of a low-rank signal of interest from a sparse signal of outliers. Such a low-rank/sparse representation (LRSR) has found extensive use across a myriad of signal-processing applications over the last decade. This talk reviews the foundational motivations for the coupling low-rank and sparsity constraints as well as the mathematical formulation and solution to such a framework. Several representative applications of LRSR are then overviewed, including recent results for foreground/background extraction of video, destriping of hyperspectral imagery, and unsupervised hyperspectral classification.

Biography: James E. Fowler received the B.S. degree in computer and information science engineering and the M.S. and Ph.D. degrees in electrical engineering from The Ohio State University, Columbus, OH, USA, in 1990, 1992, and 1996, respectively.

In 1997, he held a postdoctoral assignment at the Universite de Nice-Sophia Antipolis, France, and, in 2004, he was a Visiting Professor at Telecom ParisTech, Paris, France. He is currently Billie J. Ball Professor and Interim Department Head of the Department of Electrical & Computer Engineering at Mississippi State University in Starkville, MS.

Dr. Fowler is the Editor-in-Chief of IEEE Signal Processing Letters. He was previously a Senior Area Editor for IEEE Transactions on Image Processing and Associate Editor for IEEE Transactions on Computational Imaging, IEEE Transactions on Image Processing, IEEE Transactions on Multimedia, and IEEE Signal Processing Letters. He is currently an Associate Editor for the EURASIP Journal on Image and Video Processing. He is a former chair of the Image, Video, and Multidimensional Signal Processing Technical Committee of the IEEE Signal Processing Society and is currently a member of the Computational Imaging Technical Committee of the IEEE Signal Processing Society. He was a General co-Chair of the 2014 IEEE International Conference on Image Processing, Paris, France, and the Speech, Image, and Video Processing track chair of the 2013 Asilomar Conference on Signals, Systems, and Computers. He is currently the publicity chair of the Data Compression Conference. He is a Fellow of the IEEE.
Title: Virtual Sound Barriers and their Applications  
Speaker: Prof. Xiaojun Qiu, University of Technology Sydney, Australia  
Time: 14:15-15:00, December 13, 2019  
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel

Abstract: Active control is a method of reducing existing noise by the introduction of controllable secondary sources to affect the radiation and transmission of the original primary noise source. It can provide better solutions to low frequency noise problems than the current passive noise control methods when there are weight, volume, or access constraints. A virtual sound barrier is an active noise control system that uses arrays of loudspeakers and microphones to create a practical size of quiet zone in a noise environment just like an acoustic barrier but without blocking air and light. This technology can be used to reduce sound radiation from noise sources or to reduce noise level around one or few person heads in noisy environments. This lecture introduces the history, principle and design methods of the virtual sound barriers first, and then describes recent progress in research on the systems, especially the applications of planar virtual sound barriers on power transformer noise radiation control from an enclosure and on traffic noise transmission control from outside into a room via an open window. This lecture is concluded by the limitations and future direction discussions of the virtual sound barriers.

Biography: Xiaojun Qiu is a professor in Audio, Acoustics and Vibration at Center for Audio, Acoustics and Vibration in Faculty of Engineering and Information Technology, University of Technology Sydney. He received his Bachelor and Master degrees from Peking University in 1989 and 1992, and his PhD from Nanjing University in 1995, respectively, all majoring in Acoustics. He worked in the University of Adelaide as a Research Fellow in the field of active noise control from 1997 to 2002, worked in the Institute of Acoustics of Nanjing University as a professor on Acoustics and Signal processing from 2002 to 2013, and worked at RMIT University as a Professor of Design on Audio Engineering from 2013 to 2016. He joined University of Technology Sydney in 2016. Xiaojun Qiu’s main research areas include noise and vibration control, room acoustics, electro-acoustics and audio signal processing, particularly applications of active control technologies. He is a Fellow of Audio Engineering Society and a Fellow of International Institute of Acoustics and Vibration. He serves as an Associate Editor for the International Journal of Acoustics and Vibration and an Associate Technical Editor for the Journal of Audio Engineering Society. He has authored and co-authored 1 package of software, 3 books, 5 book chapters, 7 national standards and more than 400 academic papers. He has applied more than 90 invention patents, and more than 50 of them have been granted. He founded the center for Audio, Acoustics and vibration in Faculty of Engineering and Information Technology at University of Technology Sydney in 2016, which is one of the largest acoustics centres in Australia at present.
Title: Toward Theoretical Understanding of Deep Learning  
Speaker: Prof. Caiming Qiu, Shanghai Jiao Tong University, China  
Time: 16:00-16:45, December 13, 2019  
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel

Abstract: Nowadays, deep learning is definitely one of the most popular topics in computer science. For some specific tasks, e.g., speech recognition, image classification, deep learning is the state-of-the-art approach, even better than human beings. However, there is still no significant result on the foundation of deep learning. Recently, more and more works focus on the theoretical analysis and interpretation of deep learning from various viewpoints.

In this talk, we will first give a brief review on the theoretical development of deep learning. Several emerging approaches or frameworks, e.g., RMT(Random Matrix Theory), NTK(Neural Tangent Kernel) are introduced. Finally, we will demo some interested applications of deep learning in image understanding, anomaly detection and wireless communication.

Biography: Prof. Caiming Qiu, IEEE fellow, Distinguished Professor of National Thousand Talents Program, Director of Research Center for Big Data of Shanghai Jiao Tong University. He contributed to the development of the rigorous analysis of big data under random matrix framework. All of the results are included in 3 monographs titled as Smart Grid and Big Data: Theory and Practice, Cognitive Networked Sensing and Big Data and Cognitive Radio Communication and Networking: Principles and Practice. His current interest is in some theoretical problems arising in deep learning and big data. Prof. Caiming Qiu holds 8 patents and published over 70 journal papers and 100 conference papers. He won ICC Best Paper Award in 2011. ICC is one of the IEEE Communications Society’s two flagship conferences.

Prof. Caiming Qiu received the Ph.D. degree in electrical engineering from New York University. He served at Bell Laboratories from 1997 to 2000. He was Founder-CEO and President of Wiscom Technologies, Inc.
Title: Future Wireless – Game-Changing Technology for Everything
Speaker: Prof. Ke Wu, University of Montreal, Canada
Time: 16:45-17:30, December 13, 2019
Place: Crowne Grand Ballroom A2+A3, B2 of Hotel

Abstract: Recent research and development of hardware architectures and technologies over MHz-through-THz frequency range have generated a significant momentum for future wireless applications. This leap forward is being propelled by the organic fusion of multiple functions and the scalable integration of multiple technologies through heterogeneous materials and innovative processes. This presentation begins with the overview of fundamental wireless functionalities. Emerging diversity scenarios and integration solutions in wireless technologies are reviewed in connection with performance and efficiency. Technological roadmap is highlighted with reference to enabling and building technological elements, ranging from current and emerging compound materials to evolving and beyond CMOS, and from developing substrate integrations to future electromagnetic techniques. The talk also provides a brief tour of the state-of-the-art and future wireless systems including various biomedical applications and healthcare services. Challenging issues and future directions of wireless technology and system development including 5G and beyond are discussed.

Biography: Dr. Ke Wu is Professor of Electrical Engineering at Polytechnique Montreal (University of Montreal). He holds the NSERC-Huawei Industrial Research Chair in Future Wireless Technologies (the first Huawei-endowed Chair in the world). He has been the Director of the Poly-Grames Research Center. He was the Canada Research Chair (2002-2016) in RF and millimeter-wave engineering and the Founding Director (2008-2014) of the Center for Radiofrequency Electronics Research of Quebec. Dr. Wu is also an adjunct professor with the School of Information Science and Engineering, Ningbo University, leading a future wireless research program. He has authored/co-authored over 1300 referred papers, and a number of books/book chapters and more than 50 patents. Dr. Wu was the general chair of the 2012 IEEE MTT-S International Microwave Symposium (the largest IEEE annual conference). He was the 2016 President of the IEEE Microwave Theory and Techniques Society (MTT-S). He also serves as the inaugural North-American representative in the General Assembly of the European Microwave Association (EuMA). He was the recipient of many awards and prizes including the inaugural IEEE MTT-S Outstanding Young Engineer Award, the 2004 Fessenden Medal of the IEEE Canada, the 2009 Thomas W. Eadie Medal from the Royal Society of Canada (The Academies of Arts, Humanities and Sciences of Canada), the Queen Elizabeth II Diamond Jubilee Medal, the 2013 Award of Merit of Federation of Chinese Canadian Professionals, the 2014 IEEE MTT-S Microwave Application Award, the 2014 Marie-Victorin Prize (Prix du Québec – the highest distinction of Québec in the Natural Sciences and Engineering), the 2015 Prix d’Excellence en Recherche et Innovation of Polytechnique Montréal, the 2015 IEEE Montreal Section Gold Medal of Achievement and the 2019 IEEE MTT-S Microwave Prize. He is a Fellow of the IEEE, a Fellow of the Canadian Academy of Engineering (CAE) and a Fellow of the Royal Society of Canada. He was an IEEE MTT-S Distinguished Microwave Lecturer from Jan. 2009 to Dec. 2011.
Abstract: In this talk, we will present basic concepts related to edge intelligence for 5G Beyond and key enabling technologies with respect to communications, computation, machine learning, deep learning and cyber-physical optimization. We will first introduce the main concepts and challenges in 5G Beyond. Then, we will provide a thorough perspective on how mobile edge computing concepts can be adapted for 5G networks. In this scenario, we will focus on resource allocation, models and optimization problems, and various offloading and caching techniques. Next, we will extend mobile edge computing to edge intelligence and present our ideas on utilizing deep reinforcement learning (deep Q-learning, DDPG) for data transmission, offloading and content distribution in 5G networks. We will further present edge intelligence in 5G-enabled IoT systems, e.g., intelligent transport systems. The approach and the solutions in this context will result in highly efficient interconnection and synergy among various types of components in 5G networks and its applications.

Biography: Professor Yan Zhang, named 2018 and 2019 “Highly Cited Researcher” (Web of Science top 1% most cited worldwide), is Full Professor in the Department of Informatics at University of Oslo, Norway. He received a PhD degree in School of Electrical & Electronics Engineering, Nanyang Technological University, Singapore. He is an Associate Technical Editor of IEEE Communications Magazine, an Editor of IEEE Network Magazine, an Editor of IEEE Transactions on Vehicular Technology, an Editor for IEEE Transactions on Industrial Informatics, an Editor of IEEE Transactions on Green Communications and Networking, an Editor of IEEE Communications Surveys & Tutorials, an Editor of IEEE Internet of Things journal, an Editor of IEEE Systems Journal, and an Editor of IEEE Vehicular Technology Magazine. He serves as chair positions in a number of conferences, including IEEE GLOBECOM 2017, IEEE PIMRC 2016, IEEE CCNC 2016, WICON 2016, IEEE SmartGridComm 2015, and IEEE CloudCom 2015. His current research interests include: next-generation wireless networks leading to 5G, reliable and secure cyber-physical systems (e.g., smart grid, healthcare, and transport). He is IEEE VTS (Vehicular Technology Society) Distinguished Lecturer during 2016-2020. He is also a senior member of IEEE, IEEE CS, IEEE PES, IEEE ComSoc, and IEEE VT society.
Title: Hardware Support Architectures and Implementations for Effective Embedded AI and Signal Processing
Speaker: Prof. Yvon Savaria, Polytechnique Montreal, Canada
Time: 19:00 - 21:30, December 10, 2019
Place: Function Room 2, B2 of Hotel

Abstract: Signal Processing and AI algorithms can be very demanding when used in embedded systems with stringent density, power and energy consumption constraints. Hardware accelerators and dedicated architectures are often mandatory to meet system requirements. This talk will review the concept of hardware accelerators, how they can be implemented and what they can contribute to embedded signal processing and AI engines. The benefits can be in terms of throughput, latency, power, energy and system density. Designers can leverage many solutions, ranging from multi-processor, ASIP, ASICs and FPGA based systems on chip. A global perspective, covering from roots of the field to state-of-the-art methods will be presented. The talk will tap on a long experience developed through dozens of implementations and applications leveraging diverse technologies.

Biography: Yvon Savaria FIEEE received the B.Ing. and M.Sc.A in electrical engineering from Polytechnique Montreal Canada in 1980 and 1982 respectively. He also received the Ph.D. in electrical engineering in 1985 from McGill University. Since 1985, he has been with Polytechnique Montreal, where he is currently professor and director of the Microelectronics Research Group in the department of electrical engineering. Professor Savaria was also appointed as a guest scientist at the Innovation Institute of Beihang University.

He has carried work in several areas related to microelectronic circuits and microsystems such as testing, verification, validation, physical design methods, defect and fault tolerance, effects of radiation on electronics, CAD methods, reconfigurable computing and applications of microelectronics to telecommunications, aerospace, image processing, video processing, radar signal processing, and digital signal processing acceleration. He is currently involved in several projects that notably relate to virtual networks, machine learning, computational efficiency and application specific architecture design. He used artificial neural networks and a wide range of hardware acceleration techniques to implement effective hardware accelerated signal processors over the past 30 years. He holds 16 patents, has published more than 160 journal papers and more than 460 conference papers.

He has been working as a consultant or was sponsored for carrying research by more than 20 companies or research organizations. He is a member of the Regroupement Stratégique en Microélectronique du Québec (Canada) (RESMIQ), of the Ordre des Ingénieurs du Québec (OIQ - Canada), and is a member of CMC Microsystems Advisory Committee. He was co-founder of two high-tech spin-offs and an early collaborator to several others. He also received in 2006 a Synergy Award of the Natural Sciences and Engineering Research Council of Canada for his work with LTRIM.
Title: Cyclostationarity and Generalizations: an Ubiquitous Statistical Model for Science Data
Speaker: Prof. Antonio Napolitano, University of Napoli “Parthenope”, Italy
Time: 19:00 - 21:30, December 11, 2019
Place: Function Room 1, B2 of Hotel

Abstract: Cyclostationary signals and their generalizations are a suitable model for data originated by many processes arising from the interaction/combination of periodic phenomena and random phenomena. Examples come from many fields including communications, radar/sonar, telemetry, mechanics, biology, astronomy, and econometrics. Statistical characterization and applications of cyclostationary signals and their generalizations are reviewed. In particular, the problems of statistical function measurements, filtering, uniform sampling, parameter estimation, and signal detection are addressed. A link with other nonstationarity models is discussed.

Biography: Antonio Napolitano (M’95–SM’07–F’16) was born in Napoli, Italy, in 1964. He received the Ph.D. degree in electronic engineering and computer science from the University of Napoli Federico II, Naples, Italy, in 1994. In 1997, he was with the Department of Electrical and Computer Engineering, University of California, Davis, CA, USA, as a Postdoctorate Research Associate. From 1995 to 2001 he has been Assistant Professor and from 2001 to 2005 Associate Professor at the University of Napoli Federico II. Since 2005, he is a Full Professor in telecommunications at the University of Napoli “Parthenope.” In 2005, he was a Visiting Professor at the Institute de Recherche Mathematique de Rennes, Haute Bretagne, France. In 2010 and 2013, he was a Visiting Professor at the Laboratoire d’Analyse des Signaux & des Processus Industriels, Universite Jean-Monnet, Roanne, France. In 2014 and 2015, he was a Visiting Professor at Ecole Nationale Superieure d’Electronique, d’Electrotechnique, d’Informatique et d’Hydraulique et Telecomunications, Toulouse, France. He held visiting appointments at the Universite de Nice—Sophia Antipolis, France (1994); the University of North Carolina, Chapel Hill, NC, USA (1997, 2001, 2002); the Technical University of Wroclaw, Poland (1999, 2001); the Centro de Investigacion en Matematicas, Guanajuato, Mexico (2000–2002); Econometric Department, Wyszsa Szkoła Biznesu, Nowy Sacz, Poland (2000–2007); the School of Electrical and Information Engineering, University of South Australia (2010). He is the author of the books Generalizations of Cyclostationary Signal Processing: Spectral Analysis and Applications (Wiley-IEEE Press, 2012) and Cyclostationary Processes and Time Series: Theory, Applications, and Generalizations, Elsevier, 2019. In 1996, he received the Best Paper of the Year Award from the European Association for Signal Processing (EURASIP) for a paper on higher order cyclostationarity. In 2007, he received the EURASIP Best Paper Award for a paper on the functional approach in signal analysis. In 2008, he received the Most Cited Paper Award for a review article on cyclostationarity from Elsevier. From 2006 to 2009 and from 2011 to 2015, he has been an Associate Editor of the IEEE Transactions on Signal Processing. He is on the Editorial Board of Signal Processing (Elsevier) since 2008 and Digital Signal Processing (Elsevier) since 2015. From 2008 to 2013, he has been an Elected Member of the Signal Processing Theory and Method Technical Committee of the IEEE Signal Processing Society. Since 2017, he has been an Elected Member of the Sensor Array and Multichannel Technical Committee of the IEEE Signal Processing Society. He is EURASIP Local Liaison Officer.
Title: Advanced Monopulse Processing of Phased Array Radar
Speaker: Prof. Kai-Bor Yu, Shanghai Jiao Tong University, China
Time: 19:00 - 21:30, December 11, 2019
Place: Function Room 2, B2 of Hotel

Abstract: Monopulse processing is widely used in search and track radar. This tutorial covers topics such as robust adaptive techniques for target angle estimation in jamming and some advanced techniques that exploit 4-channel radar system for mainlobe cancellation, 2-target monopulse and weighted monopulse to eliminate the beam-shape loss. Further topics such as some extensions on mainlobe cancellation, multi-pulse monopulse and MIMO-monopulse will also be briefly covered. Here is the outline:
- monopulse radar
- robust adaptive monopulse
- 4-channel vs 3-channel phased array
- mainlobe cancellation
- 2-target monopulse
- weighted monopulse
- Some further topics on mainlobe cancellation
- multi-pulse monopulse and MIMO-monopulse

Biography: Kai-Bor Yu is a life senior member of IEEE. He received the B.S. from Yale University, the M.S. from Brown University, and the Ph.D. from Purdue University, all in Electrical Engineering. During 1982-1988, he was an Assistant Professor of Electrical Engineering at Virginia Tech. Since then he had worked in industry for 25 years that included employment as Principal Systems Engineer at GE Global Research Center, Raytheon Company, Lockheed Martin Company and Boeing Company. Since 2015, he is a Visiting Professor at the School of Electronics, Information and Electrical Engineering, Shanghai Jiao Tong University. In 1992, Dr. Yu was inducted into GE’s Whitney Gallery of Technical Achievers for his contributions’ on Radar Electronic Protection. He has also received best paper awards in 1993 IEEE Radar Conference and in 2016 IET International Radar Conference. Dr. Yu has contributed to over 30 US/International patents and numerous journal and conference publications. His research interests include different aspects of radar signal processing and systems analysis.
Title: GNSS Precise Point Positioning With Android Smartphones and Comparison with High Performance Receivers
Speaker: Prof. Gérard Lachapelle, Polytechnique Montreal, Canada
Time: 19:30 - 22:00, December 12, 2019
Place: Function Room 1, B2 of Hotel

Abstract: Precise Point Positioning (PPP) is becoming increasingly used instead of differential GNSS (DGNSS) due to its ease of use. With PPP, precise satellite orbits and clock corrections are calculated using the numerous International GNSS Service (IGS) permanent stations. The IGS network conceptually replaces the reference station(s) used in DGNSS. Models of the ionosphere and the troposphere are used to aid PPP, especially ionospheric models for single frequency users. In addition to 3D position, PPP provides estimates of GNSS time and zenith tropospheric delays.

Biography: Professor Emeritus Gérard Lachapelle holds a Canada Research Chair/Informatics Circle of Research Excellence Chair in wireless location in the Department of Geomatics Engineering, the University of Calgary, Canada, where he has been professor since 1988 and Department Head from 1995 to 2003. From 1980 to 1988, he was Executive VP of Nortech (Surveys) Canada Inc. and Norstar Instruments where he directed GPS R&D programs, which resulted in the development of receiver technology that was subsequently taken over by NovAtel Inc in the late 80s. Since joining the University of Calgary, he and his PLAN (Position, Location And Navigation) Proup have developed numerous novel algorithms, software and patents related to Global Navigation Satellite Systems (GNSS) that have been licensed worldwide. Since holding a CRC/iCORE Chair in wireless location in 2001, this research also includes the development of new GNSS signal processing methods, indoor technologies and new applications. He holds degrees in geodesy and surveying engineering for Laval University, the University of Oxford, the University of Helsinki and the Technical University at Graz. Prior to 1980, he worked for five years as a geodetic engineer with the Geodetic Survey of Canada where he was involved in geodetic research and the Redefinition of the North American Datum, a joint project with the U.S. National Geodetic Survey. Professor Lachapelle has been active in numerous associations and was Western Vice President of the (U.S.) Institute of Navigation in 2002-03. He has received scores of awards for his work, including the Institute of Navigation Johannes Kepler Award in 1997 and fellowship of IEEE, the Royal Society of Canada, the Institute of Navigation, the Canadian Academy of Engineering and the Royal Institute of Navigation.
Title: Use of the Fractional Fourier Transform for Radar Target Identification using the Singularity Expansion Method

Speaker: Prof. Tapan K. Sarkar, Syracuse University, USA
Time: 19:30 - 22:00, December 12, 2019
Place: Function Room 2, B2 of Hotel

Abstract: This presentation will discuss the Fractional Fourier Transform for estimating parameters of damped sinusoids utilizing both early and late time transient scattering data contaminated by noise. Transient scattering responses are composed of damped sinusoids at late times and impulse-like components at early times. Due to the impulse-like components, it is difficult to extract meaningful damped sinusoids. In this study the entire noisy time domain response is used to extract the signal parameters of interest. The fractional Fourier transform (FrFT), especially the half Fourier transform (HFT) is used to analyze the data for parameter identification. Impulse or Gaussian-like pulses can be easily separated from the damped exponentials in the HFT domain, as they have similar functional representations. Results from several examples show that the new technique is applicable for noisy signals that are composed of damped exponentials and pulse-like components.

Biography: Tapan K. Sarkar received the B.Tech. degree from the Indian Institute of Technology, Kharagpur, in 1969, the M.Sc.E. degree from the University of New Brunswick, Fredericton, NB, Canada, in 1971, and the M.S. and Ph.D. degrees from Syracuse University, Syracuse, NY, in 1975. From 1975 to 1976, he was with the TACO Division of the General Instruments Corporation. He was with the Rochester Institute of Technology, Rochester, NY, from 1976 to 1985. He was a Research Fellow at the Gordon McKay Laboratory, Harvard University, Cambridge, MA, from 1977 to 1978. He is a Professor in the Department of Electrical and Computer Engineering, Syracuse University. His current research interests deal with numerical solutions of operator equations arising in electromagnetics and signal processing with application to system design. He has authored or coauthored more than 400 journal articles and numerous conference papers and 32 chapters in books and fifteen books.

Dr. Sarkar is a Registered Professional Engineer in the State of New York. He received the College of Engineering Research Award in 1996 and the Chancellor’s Citation for Excellence in Research in 1998 at Syracuse University. He was the 2014 President of the IEEE Antennas and Propagation Society. He is the receipient of the 2020 IEEE Electromagnetics Field Award.

He received Docteur Honoris Causa from Universite Blaise Pascal, Clermont Ferrand, France in 1998, from Politechnic University of Madrid, Madrid, Spain in 2004, and from Aalto University, Helsinki, Finland in 2012. He received the medal of the friend of the city of Clermont Ferrand, France, in 2000.
Oral Sessions

Oral Session 1: Photon/Quantum Communications

Time: 13:30 - 15:30, December 11, 2019
Place: Function Room 2-1, B2 of Hotel
Chairs: Prof. Xiangdong Zhang, Beijing Institute of Technology, China
Prof. Baosen Shi, University of Science and Technology of China, China

13:30 MICROWAVE QUANTUM OPTICS PHENOMENA IN SUPERCONDUCTING QUANTUM CIRCUITS (INVITED TALK)
Yuxi Liu
Tsinghua University

13:50 PRACTICAL QUANTUM SECURE DIRECT COMMUNICATION (INVITED TALK)
Gui-Lu Long
Tsinghua University

14:10 PHOTONICS SHAPES MICROWAVE COMMUNICATIONS AND MEASUREMENTS (INVITED TALK)
Xihua Zou
Southwest Jiaotong University

14:30 QUANTUM INFORMATION PROCESSING WITH ORBITAL ANGULAR MOMENTUM STATES (INVITED TALK)
Bao-Sen Shi
University of Science and Technology of China

14:50 MICROWAVE PHOTONIC RADAR (INVITED TALK)
Wangzhe Li
Institute of Electronics of the Chinese Academy of Sciences

15:10 SILICON PHOTONIC INTEGRATED CIRCUITS FOR MICROWAVE SIGNAL GENERATION AND PROCESSING (INVITED TALK)
Weifeng Zhang
Beijing Institute of Technology
Oral Session 2: Applications and Services based on Big Data

Time: 13: 30 - 15: 30, December 11, 2019
Place: Function Room 2-2, B2 of Hotel
Chairs: Prof. Chi Liu, Beijing Institute of Technology, China
        Prof. Yin Zhang, Zhongnan University of Economics and Law, China

13: 30  MULTI-GRANULARITY COGNITIVE COMPUTING FOR BIG DATA (INVITED TALK)
Qinghua Zhang
Chongqing University of Posts and Telecommunications

13: 50  SMART SENSING FOR INDUSTRIAL IOT (INVITED TALK)
Yuan He
Tsinghua University

G4874  SHORT-TERM TRAFFIC FLOW PREDICTION BASED ON THE DIFFERENTIAL DATA GRAPH AND DEEP LEARNING
Haijing Zhang¹, Bobin Yao¹*¹
¹School of Electronic and Control Engineering, Chang’an University,
Xi’an 710064, P. R. China

G7136  HIN-VMRESYS: HETEROGENEOUS INFORMATION NETWORK BASED VEHICLE MUSIC RECOMMENDATION SYSTEM
Ranran Wang¹, Yi Ye¹, Chi Jiang¹, Xiao Ma¹*¹
¹Zhongnan University of Economics and Law, Wuhan, China

G3778  EDGE-BASED DIFFERENTIAL BIG DATA PROCESSING FOR SENSOR-CLOUD SYSTEMS
Yaxin Mei¹, Tian Wang¹*, Ying Ma²,³
¹College of Computer Science and Technology, Huaqiao University, Xiamen, China
²College of Computer and Information Engineering, Xiamen University of Technology, Xiamen, China
³Key Laboratory of Data Mining and Intelligent Recommendation, Fujian Province University, Xiamen, China

G1546  THE RESEARCH ON DATA ACQUISITION, PROCESSING, AND APPLICATION OF MULTI TYPE ENVIRONMENT
Zhen Lin, Xiaofeng Zhang, Jianguo Ling, Hongyan Su, Wei Jin, Caixia Yang, Rundong Fan, Rundong Fan
Beijing Institute of remote Sensing equipment Beijing, China
Oral Session 3: Communications and Networks I

Time: 13: 30 - 15: 30, December 11, 2019
Place: Function Room 4-3, B1 of Hotel
Chairs: Prof. Guan Gui, Nanjing University of Posts And Telecommunications, China
        Prof. Haijun Zhang, University of Science & Technology Beijing, China

13: 30  DEEP LEARNING FOR NEXT-GENERATION PHYSICAL LAYER WIRELESS COMMUNICATIONS (INVITED TALK)
        Guan Gui
        Nanjing University of Posts and Telecommunications

13: 50  COOPERATIVE LOCALIZATION, FROM THEORY TO PRACTICE (INVITED TALK)
        Nan Wu
        Beijing Institute of Technology

14: 10  STATISTICAL CSI ACQUISITION IN NON-STATIONARY MASSIVE MIMO ENVIRONMENT (INVITED TALK)
        Wei Peng
        Huazhong University of Science and Technology

14: 30  ARTIFICIAL INTELLIGENCE BASED FUTURE MOBILE NETWORKS (INVITED TALK)
        Haijun Zhang
        University of Science & Technology Beijing

C5367  PHASE-ROTATED SPECTRAL CORRELATION DETECTOR BASED SENSING FOR WIDEBAND SPECTRUM AT LOW SNRS
        Chaochao Sun¹², Peizhong Lu¹*
        ¹School of Computer Science, Fudan University, Shanghai, China
        ²College of Computer Science and Technology, Shanghai University of Electric Power, Shanghai, China

C7975  OUTAGE OF FREQUENCY DIVERSE ARRAY-BASED SECURE TRANSMISSION OVER RAYLEIGH FADING CHANNELS*
        Shilong Ji, Wen-Qin Wang*
        School of Information and Communication Engineering, University of Electronic Science and Technology of China, Chengdu, China
Oral Session 4: Image, Video, and Multimedia Processing I

Time: 13: 30 - 15: 30, December 11, 2019
Place: Function Room 4-1, B1 of Hotel
Chairs: Prof. Hongliang Li, University of Electronic Science and Technology of China, China
         Prof. Yuxin Peng, Peking University, China

13: 30 VISION-LANGUAGE MAPPING FOR REFERRING IMAGE SEGMENTATION (INVITED TALK)
Hongliang Li
University of Electronic Science and Technology of China

13: 50 CROSS-MEDIA INTELLIGENCE: REPRESENTATION, ANALYSIS, AND APPLICATION (INVITED TALK)
Yuxin Peng
Peking University

14: 10 ON-MANIFOLD VIDEO MOTION ANALYSIS AND ITS APPLICATION (INVITED TALK)
Hua Huang
Beijing Institute of Technology

B2412 SCENE-BASED BLIND AND FLICKERING PIXEL DYNAMIC CORRECTION ALGORITHM
14: 30
Zizhuang Song1*, Dongfang Zhang1, Shuo Zhang1
1Beijing Institute of Remote Sensing Equipment, Beijing 100854, China

B2189 SOLDER JOINT DEFECT DETECTION BASED ON IMAGE SEGMENTATION AND DEEP LEARNING
14: 50
Shijia Gao1,2, Hui Zhang1,2, Hanguang Mi1,2
1National Key Laboratory of Science and Technology on Aerospace Intelligent Control, Beijing, China
2Beijing Aerospace Automatic Control Institute, 50# Yongding Road, Beijing, China

B2464 POLSAR IMAGE SEGMENT USING MODEL-BASED DECOMPOSITION AND ENERGY MINIMIZATION
15: 10
Chengcai Yang1*, Hui Yu1, Long Zhuang1, Ming Hao1
1Nanjing Research Institute of Electronics Technology, Nanjing, China
Oral Session 5: AI Applications

Time: 13: 30 - 15: 30, December 11, 2019
Place: Function Room 4-2, B1 of Hotel
Chairs: Prof. Yilong Lu, Nanyang Technological University, Singapore
         Prof. Lan Du, Xidian University, China

F1172 A NOVEL METHODOLOGY OF CARDIAC ARRHYTHMIA
13: 30 CLASSIFICATION BASED ON ECG AND CONTEXT-DEPENDENT HMM
Wenjing Wei1, Xun Wang1, Ge Zhan1, Pengyuan Zhang1,* Yonghong Yan1,2,3
1Key Laboratory of Speech Acoustics and Content Understanding, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China
2Xinjiang Laboratory of Minority Speech and Language Information Processing, Xinjiang Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Xining, China
3University of Chinese Academy of Sciences, Beijing, China

F4154 HIERARCHICAL JOINT LEARNING FOR CHINESE WORD EMBEDDINGS
13: 50 Zhe Wang1, Qiong Wang1, Yechao Bai1,* Xinggan Zhang1
1School of Electronic Science and Engineering, Nanjing University, No.163 Xianlin Road, Qixia District, Nanjing, China

F6249 AEMFACE: ADDITIVE E-MARGIN LOSS FOR DEEP FACE RECOGNITION
14: 10 Qiang Li1, Xianzhen He1, Wenguang Wang1, Shiming Ge2,*
1School of Information Engineering, Southwest University of Science and Technology, Mianyang, China
2Institute of Information Engineering, Chinese Academy of Sciences, China

F5260 A REAL-TIME ALGORITHM FOR USV NAVIGATION BASED ON DEEP REINFORCEMENT LEARNING SYSTEM
14: 30 Zhiguo Zhou1,* Yipeng Zheng1, Kaiyuan Liu1, Xu He1, Chong Qu1
1School of Information and Electronics Beijing Institute of Technology, Beijing, China
2Shanghai Marine Diesel Engine Research Institute, Shanghai, China

F4852 USING BIDIRECTIONAL LSTM WITH BERT FOR CHINESE PUNCTUATION PREDICTION
14: 50 Mingfeng Fang1,2, Haifeng Zhao1, Xiaoxi Song2, Xin Wang3, Shilei Huang2
1School of Computer Science and Technology, Anhui University, Hefei, China
2PKU-HKUST Shenzhen Hong Kong Institution, Shenzhen, China
3Shenzhen Raisound Technologies, Co., Ltd, Shenzhen, China

F2990 NEWS TOPIC DISCOVERY THROUGH COMMUNITY DETECTION
15: 10 Daqing Wu, Xiangyang Guo, Jinwen Ma*
Department of Information and Computing Science, School of Mathematical Sciences & LMAM Peking University, Beijing, 100871, P.R. China
Oral Session 6: GPR and Wideband Imaging

Time: 13: 30 - 15: 30, December 11, 2019
Place: Function Room 1, B2 of Hotel
Chairs: Prof. Xuan Feng, Jilin University, China
Prof. Shaoming Wei, Beihang University, China

13: 30 POLARIMETRIC MIGRATION IMAGING OF FULL POLARIMETRIC GPR (INVITED TALK)
Xuan Feng
Jilin University

13: 50 AUTOMATIC DETECTION AND CHARACTERIZATION OF REBAR IN CONCRETE USING A DUAL SENSOR OF GPR AND EMI (INVITED TALK)
Hai Liu
Guangzhou University

14: 10 ULTRAWIDEBAND IMAGING: THEORY AND APPLICATIONS (INVITED TALK)
Tian Jin
National University of Defense Technology

14: 30 NOVEL GPR DATA PROCESSING TECHNOLOGIES TO DETECT THE DEFECTS AND GROUTING OF TUNNELING (INVITED TALK)
Xiongyao Xie
Tongji University

14: 50 ULTRA-WIDEBAND THREE-DIMENSIONAL IMAGING METHOD BASED ON STATE SPACE PROCESSING (INVITED TALK)
Shaoming Wei
Beihang University

15: 10 MULTIDIMENSIONAL FREQUENCY ESTIMATION USING UNITARY PUMA ALGORITHM WITHOUT PAIRING PARAMETERS (INVITED TALK)
Yuntao Wu
Wuhan University of Technology
Oral Session 7: Audio and Acoustic Systems Analysis and Algorithms

Time: 16:00 - 18:00, December 11, 2019
Place: Function Room 4-3, B1 of Hotel
Chairs: Prof. Wenwu Wang, University of Surrey, UK
         Prof. Jing Guo, Beijing Institute of Technology, China

A1046 DNN-BASED SPEECH ENHANCEMENT FOR IMPROVING SPEECH QUALITY AND INTELLIGIBILITY SIMULTANEOUSLY
16:00
Ge Zhan1,2*, Wenjing Wei1,2, Qi Hu1,2, Pengyuan Zhang1,2
1Institute of Acoustics, Chinese Academy of Sciences, No.19 West North Fourth Ring Road, Beijing, China
2University of Chinese Academy of Sciences, No.19 Yuquan Road, Beijing, China

A3087 DNN AND CLUSTERING BASED BINAURAL SOUND SOURCE LOCALIZATION IN MISMATCHED HRTF CONDITION
16:20
Jin Wang1, Jing Wang1*, Zhaoyu Yan1, Xinyao Wang1, Xiang Xie1
1School of Information and Electronics, Beijing Institute of Technology, Beijing, China

A3177 BEAMFORMING AND DEEP MODELS INTEGRATED MULTI-TALKER SPEECH SEPARATION
16:40
Chao Peng1, Xihong Wu1, Tianshu Qu1*
1Key Laboratory on Machine Perception (Ministry of Education), Speech and Hearing Research Center, Peking University, Beijing, China

A3221 SIMULATION OF SHIP-RADIATED NOISE BASED ON SHALLOW MARINE ENVIRONMENT
17:00
Yeye Liu1, Yaohui Lv1*, Tingting Lv1, Yuchao Wei2, Xing Liu3
1Ocean University of China, No. 238, Songling Road, Laoshan District, Qingdao, Qingdao, China
2The second representative office in Qingdao, Qingdao, China
3Qingdao Digitech Information Technology co., LTD, Qingdao, China

A4534 PERFORMANCE COMPARISON OF M ARY AND CSK SPREAD SPECTRUM COMMUNICATION OVER DEEP SEA VERTICAL CHANNEL
17:20
Shengjun Xiong, Lisheng Zhou, Qiming Ma, Yupeng Du, Zhenduo Wang, Chao Wang
Science and Technology on Sonar Laboratory, Hangzhou Applied Acoustic Research Institute, Hangzhou, P. R. China
A41077  MAXIMUM CORRENTROPY CRITERION BASED SPARSE CHANNEL ESTIMATION UNDER IMPULSIVE NOISE IN COMPLEX DOMAIN
Xiao Zhang1, Yanan Tian2,3,4*, Xiao Han2,3,4, Qingyu Liu5, Longxiang Guo2,3,4
1College of Computer Science and Technology, JiLin University, Chang Chun, China
2Acoustic science and Technology laboratory, Harbin Engineering University, Harbin 150001, China
3Key Laboratory of Marine Information Acquisition and Security (Harbin Engineering University), Harbin 150001, China
4College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin 150001, China
5Naval Equipment Research Institute, Beijing, China

Oral Session 8: Novel Approaches and Technologies for Big Data

Time: 16: 00 - 18: 00, December 11, 2019
Place: Function Room 2-2, B2 of Hotel
Chairs: Prof. Hongfei Zhu, Chongqing University of Posts and Telecommunications, China
Prof. Shuang Li, Beijing Institute of Technology, China

G4782  ADAPTIVE ENSEMBLE EMBEDDING FOR TRANSFER LEARNING
16: 00  Binhui Xie1, Yunqiang Duan2, Shuang Li1*
1School of Computer Science and Technology, Beijing Institute of Technology, Beijing, China
2Coordination Center of China, National Computer Network Emergency Response Technical Team Beijing, China

G1837  A MEASURABLE FRAMEWORK FOR RUN TIME DATA SAMPLING IN LARGE SCALE DATACENTER
16: 20  Hedong Yan, Shilin Wen, Rui Han*
Department of Computer Science, Beijing institute of technology, Beijing, China

G5094  OPTIMIZED CLUSTERING BASED ON SEMANTIC SIMILARITY OF COMPONENTS FOR SHORT TEXT
17: 00  Wensong Liu*, Feng Lin, Zhuqing Hu, Jinhui Zhang
State Grid of Electrical Power Research Institute, Nanjing, China

G5095  PERSONALIZED RECOMMENDATION MODEL OF TRAFFIC PACKAGE BASED ON USER CONSUMPTION BEHAVIOR
16: 40  Jing Du, Haochen Xu, Zhixiao Tu
Zhongnan University of Economics and Law, Wuhan, China

G4035  SYNERGISTIC TARGET TRACKING OF SURFACE TARGET WITH MULTIPLE CRUISE MISSILES*
17: 20  Xiangyu Zhang1*, Jingli Huang2, Guohong Wang3, Lin Li1, Lin Yang1, Tingting Xin1
1Institute of Information Fusion of Naval Aviation University, Yantai, China
2UAV Teaching and Research Room of Naval Aviation University, Qindao, China
ENABLING DIFFERENTIALLY PRIVATE IN BIG DATA MACHINE LEARNING
Dong Li¹, Xiaojiang Zuo¹, Rui Han¹
¹Department of Computer Science, Beijing institute of technology, Beijing, China

Oral Session 9: Adaptive Beamforming and Interference Suppression

Time: 16: 00 - 18: 00, December 11, 2019
Place: Function Room 2-1, B2 of Hotel
Chairs: Prof. Tian Jin, National University of Defense Technology, China
       Prof. Xiongyao Xie, Tongji University, China

E2511 SPARSE ADAPTIVE BEAMFORMER DESIGN WITH A GOOD QUIESCENT BEAMPATTERN
Xuan Zhang, Xiangrong Wang*
Beihang University Beijing, China

E2549 THE ANALYSIS OF INTERFERENCE SUPPRESSION CAPABILITY OF MVDR ALGORITHM BASED ON MICROPHONE ARRAY
Haonan Shang¹, Shizhe Tan², Jun Miao¹, Chao Liu¹
¹College of Information Science and Engineering, Ocean University of China, QingDao, China
²China Electronic Technology Group Corporation No. 54, Shijiazhuang, China

E2725 BEAMPATTERN SYNTHESIS WITH SUBARRAY LAYOUT
Lifang Feng, Guolong Cui*, Lingjiang Kong, Siyu Miao
School of Information and Communication Engineering, University of Electronic Science and Technology of China, Chengdu 611731, China

E3068 RESEARCH ON COMPOSITE DECEPTION INTERFERENCE RECOGNITION AND SUPPRESSION TECHNOLOGY BASED ON MULTI-DIMENSIONAL FEATURES
YANG Lin*, ZHANG Xiangyu, LI Lin, WANG Guohong
Institute of Information Fusion Naval Aeronautical University, Yantai, China

E3327 KNOWLEDGE AIDED DIRECT DATA DOMAIN STAP ALGORITHM FOR FORWARD LOOKING AIRBORNE RADAR
Zhiqi Gao¹, Haihong Tao²
¹College of Information Engineering, Inner Mongolia University of Technology, Hohhot, China
²National Laboratory of Radar Signal Processing, Xidian University, Xi’an, China
E11104 ADAPTIVE MONOPOLE ANGLE ESTIMATION METHOD FOR DISTRIBUTED RADAR IN PRESENCE OF MAINLOBE JAMMING

Junqi Xue¹, Xuchen Wu¹, Xiaopeng Yang¹*, Manjun Lu², Yao Yao²

¹School of Information and Electronics, Beijing Institute of Technology, and Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China
²Shanghai Radio Equipment Institute, Shanghai, China

Oral Session 10: Image, Video, and Multimedia Processing II

Time: 16:00 - 18:00, December 11, 2019
Place: Function Room 4-1, B1 of Hotel
Chairs: Prof. Guiguang Ding, Tsinghua University, China
        Prof. Jinhui Tang, Nanjing University of Science and Technology, China

16:00 FILTER PRUNING METHODS FOR DEEP NEURAL NETWORK COMPRESSION FOR COMPUTER VISION APPLICATIONS (INVITED TALK)
Guiguang Ding
Tsinghua University

16:20 WEAKLY SUPERVISED IMAGE UNDERSTANDING (INVITED TALK)
Jinhui Tang
Nanjing University of Science and Technology

B1128 A LIGHT-WEIGHT DEEP CNN OBJECT DETECTION FRAMEWORK BASED ON DENSE CONNECTIONS

16:40 Yicong Zhang¹,², Mingyu Wang²*, Yang Cao³, Xianbo Qiu¹, Wu Zhou¹, Zhaolin Li²
¹College of Information Science and Technology, Beijing University of Chemical Technology, Beijing, China
²School of Information Science and Technology, Tsinghua University, Beijing, China
³Beijing Aerospace Chenxin Technology Co., Ltd., Beijing, China

B3146 IMPACT OF STALLING ON QOE FOR 360-DEGREE VIRTUAL REALITY VIDEOS

17:00 Muhammad Shahid Anwar¹, Jing Wang¹*, Asad Ullah¹, Wahab Khan¹, Sadique Ahmad², Zhuoran Li¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing 10081, China
²School of Computer Science, Beijing Institute of Technology, Beijing 10081, China

B2763 AN INTEGRATED DETECTION AND TRACKING SYSTEM APPLIED TO UNMANNED SURFACE VEHICLES

17:20 Zhiguo Zhou¹*, Qiuling Wang¹, Zhao Jing¹, Chong Qu¹,²
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Shanghai Marine Diesel Engine Research Institute, Shanghai, China
B2060 AUTOMATIC DIGITAL RECOGNITION OF MULTIPLE ELECTRICITY DASHBOARDS
Zhiwei Zheng¹, Yi Zhou², Jiarun Cao²*, Fan Huang²
¹School of Hospitality Management, China University of Labor Relations, Beijing, China
²School of Computer Science and Technology, Beijing Institute of Technology, Beijing, China

Oral Session 11: The Internet of Things

Time: 16:00 - 18:00, December 11, 2019
Place: Function Room 4-2, B1 of Hotel
Chairs: Prof. Yulong Zou, Nanjing University of Posts and Telecommunications, China
        Prof. Yuantao Gu, Tsinghua University, China

16:00 SPEECH ENHANCEMENT WITH DEEP LEARNING (INVITED TALK)
Weiping Zhu
Concordia University

16:20 DEEP LEARNING FOR WIRELESS NETWORKS: WHICH MODEL TO USE? (INVITED TALK)
Jun Zhang
The Hong Kong Polytechnic University

16:40 HIGH-ACCURACY ADAPTIVE INDOOR LOCALIZATION: CHALLENGES AND APPROACHES (INVITED TALK)
Min Sheng
Xidian University

17:00 5G KEY TECHNOLOGIES FOR INTELLIGENT HIGH-SPEED RAILWAY (INVITED TALK)
Bo Ai
Beijing Jiaotong University

17:20 INTELLIGENT INTERFERENCE EXPLOITATION FOR HETEROGENEOUS CELLULAR NETWORKS AGAINST EAVESDROPPING (INVITED TALK)
Yulong Zou
Nanjing University of Posts And Telecommunications

17:40 COMPRESSED SUBSPACE LEARNING BASED ON CANONICAL ANGLES PRESERVING PROPERTY (INVITED TALK)
Yuantao Gu
Tsinghua University
Oral Session 12: Radar Target Detection

Time: 16: 00 - 18: 00, December 11, 2019
Place: Function Room 1, B2 of Hotel
Chairs: Prof. Zhenmiao Deng, Sun Yat-sen University, China
        Prof. Jibin Zheng, Xidian University, China

16: 00  RADAR DETECTION FOR LOW-OBSERVABLE MOVING TARGET AT SEA (INVITED TALK)
        Xiaolong Chen
        Naval Aviation University

16: 20  OPTIMAL AND SUB-OPTIMAL WIDEBAND EXTENDED TARGET DETECTION USING DECHIRPED ECHOES (INVITED TALK)
        Zhenmiao Deng
        Sun Yat-sen University

16: 40  BAYESIAN WIDEBAND RADAR TARGET DETECTION IN HETEROGENEOUS CLUTTER (INVITED TALK)
        Fengzhou Dai
        Xidian University

17: 00  RESEARCH ON RADAR TARGET SIGNAL DETECTION AND RECONSTRUCTION (INVITED TALK)
        Jibin Zheng
        Xidian University

E3437  GLRT-BASED PERSYMMETRIC DETECTORS FOR WIDEBAND RADAR TARGETS IN GAUSSIAN CLUTTER
        Tao Jian^1,*, You He^1, Yuhao Yang^2, Yingni Hou^2, Jian Zhang^3, Zhuo Tong^4
        ^1Research Institute of Information Fusion, Naval Aviation University, Yantai, Shandong, 264001, China
        ^2Key Laboratory of Intelligent Sensing Technology, Nanjing Research Institute of Electronics Technology, Nanjing, China
        ^3Unit 91206 of PLA, Qingdao, Shandong, 266108, China
        ^4Yantai First Specialized Secondary School, Yantai, Shandong, 264001, China

D2088  A METHOD FOR HIGH-SPEED AND MANEUVERING RANGE-SPREAD TARGET DETECTION
        Pengjie You^1, Zegang Ding^1*, Lichang Qian^1, Xu Zhou^1, Yangkai Wei^1, Siyuan Liu^1
        ^1School of Information and Electronics, Beijing Institute of Technology, Beijing, China
        ^1Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China
Oral Session 13: Novel Quantum/Terahertz Technology

Time: 13: 30 - 15: 50, December 12, 2019
Place: Function Room 4-2, B1 of Hotel
Chairs: Prof. Weifeng Zhang, Beijing Institute of Technology, China
        Prof. Lijian Zhang, Nanjing University, China

13: 30  PHOTONIC ENERGY-TIME ENTANGLEMENT IN QUANTUM COMMUNICATIONS (INVITED TALK)
        Wei Zhang
        Tsinghua University

13: 50  MEASURING THE QUANTUM MEASUREMENT (INVITED TALK)
        Lijian Zhang
        Nanjing University

14: 10  MANIPULATING THE COUPLING STRENGTH IN A STRONGLY COUPLED QUANTUM DOT-CAVITY SYSTEM (INVITED TALK)
        Xiulai Xu
        Institute of Physics, Chinese Academy of Sciences

14: 30  QUANTUM ENTANGLEMENT WITH PHOTONIC ORBITAL ANGULAR MOMENTUM (INVITED TALK)
        Xilin Wang
        Nanjing University

H1135  DIMENSIONAL EFFECTS OF A SILICON BASED METAMATERIAL TERAHertz BAND STOP FILTER
14: 50  Wei Xu1, Haiyang Guo1, Tao Lv1, Qian Zhang1, Yong Qin2, Xiuhan Li1*
        1School of Electronics and Information Engineering, Beijing Jiaotong University, Beijing, China
        2State Key Laboratory of Rail Traffic Control and Safety, Beijing Jiaotong University, Beijing, China

H5756  MULTIDIMENSIONAL QUANTUM STATE TOMOGRAPHY WITH COMPRESSED SENSING METHOD
15: 10  Shikang Li1, Xue Feng1*, Wei Zhang1, Yidong Huang1
        1Department of Electronic Engineering, Tsinghua University, Beijing, China

H6548  ROOM TEMPERATURE SINGLE PHOTON EMISSION OF COLLOIDAL QUANTUM DOTS AT 800NM
15: 30  Siyue Jin1, Lu Qin1, Bibo Lin1, Jie Ren1, Xingsheng Xu1*
        1College of Materials Science and Opt-Electronic Technology, University of Chinese Academy of Sciences, State Key Laboratory of Integrated Optoelectronics, Institute of Semiconductors, Chinese Academy of Science, Beijing 100083, P. R. China
Oral Session 14: Remote Sensing Target Detection I

Time: 13: 30 - 15: 30, December 12, 2019
Place: Function Room 2-1, B2 of Hotel
Chairs: Prof. Xuesong Wang, National University of Defense Technology, China
        Prof. Yiming Zhu, University of Shanghai for Science and Technology, China

13: 30 POLARIMETRIC SAR TARGET SCATTERING INTERPRETATION AND APPLICATIONS (INVITED TALK)
Xuesong Wang
National University of Defense Technology

13: 50 THZ 3-D SAR SPARSE IMAGING WITH 2-D PSEUDO-RANDOM ARRAY (INVITED TALK)
Yiming Zhu
University of Shanghai for Science and Technology

14: 10 DEEP LEARNING FOR SAR IMAGE DETECTION (INVITED TALK)
Zenghui Zhang
Shanghai Jiao Tong University

D4484 AIRPORT RUNWAY DETECTION BASED ON IMPROVED FUZZY CLUSTERING FOR POLSAR IMAGES
14: 30
Zheng Cheng¹, Ping Han²*, Yishuang Wan², Binbin Han², Xiaoguang Lu²
¹Basic Experiment Center, Civil Aviation University of China, Tianjin, China
²College of Electronic Information and Automation, Civil Aviation University of China, Tianjin, China

D4446 VEHICLE TRACKING IN CLUTTER ENVIRONMENT USING HIGH-RESOLUTION RADAR
14: 50
Lan Zhengxiang¹, Zhang Yaotian¹, Yang Bin¹*, Wang Jun¹, Zhang Yuxi¹
¹School of Electronic and Information Engineering, Beihang University, Beijing, China

D2427 ANTI-PERSONNEL MINE DETECTION BY SPARSE REPRESENTATION OF GPR B-SCAN RADARGRAM IMAGE
15: 10
Tao Sun¹, ²*, Chaopeng LUO¹, Mengna Liu², Liqing Zhou², Xianxiu Tang³, Riheng Meng², XinjianTang⁴, Weifeng Hao⁵
¹Science and Technology on Near-Surface Detection Laboratory, Wuxi, China
²Electronic Information School of Wuhan University, Wuhan, China
³Dept.of Architectural Engineering Hubei Water Resources Technical College, Wuhan, China
⁴State Key Laboratory of Geomechanics and Geotechnical Engineering Institute of Rock and Soil Mechanics, Chinese Academy of Sciences, Wuhan, China
⁵Antarctic Center of Surveying and Mapping of Wuhan University, Wuhan, China
Oral Session 15: MIMO and Diversity

Time: 13: 30 - 15: 30, December 12, 2019
Place: Function Room 1, B2 of Hotel
Chairs: Prof. Guolong Cui, University of Electronic Science and Technology of China, China
        Prof. Shengqi Zhu, Xidian University, China

13: 30 WIDEBAND MIMO RADAR WAVEFORM DESIGN (INVITED TALK)
Guolong Cui
University of Electronic Science and Technology of China

13: 50 WAVEFORM DIVERSITY RADAR AND ITS APPLICATION (INVITED TALK)
Shengqi Zhu
Xidian University

E5315 TRANSMIT COVARIANCE MATRIX FOR SINR ENHANCEMENT IN
14: 10 COLOCATED MIMO RADARS USING PARTICLE SWARM OPTIMIZATION
Wei Xiong*, Chaopeng Yu, Weiguo Lu
Leihua Electronic Technology Research Institute, Aviation Industry Corporation of China, Wuxi, China

E5744 QUARTIC OPTIMIZATION FOR MIMO RADAR TRANSMIT
14: 30 BEAMPATTERN SYNTHESIS
Jing Yang, Guolong Cui*, Xianxiang Yu, Lingjiang Kong
School of Information and Communication Engineering, University of Electronic Science and Technology of China, Chengdu City, China

E5110 ENERGY EFFICIENT POWER ALLOCATION DESIGN FOR
14: 50 BEAMSPACE MISO NON-ORTHOGONAL MULTIPLE ACCESS SYSTEMS
Penglu Liu, Yong Li, Wei Cheng, Wenjie Zhang, Xiang Gao
School of Electronics and Information, Northwestern Polytechnical University, Xi’an, Shaanxi, China

E5463 ROBUST DESIGN OF TRANSMIT/RECEIVE BEAMFORMING FOR
15: 10 MULTIPLE-INPUT MULTIPLE-OUTPUT RADAR
Junhui Qian1*, Yu Luo2, Ning Fu2, Ran Liu4, Zeyu Feng5
1School of Microelectronic and Communication Engineering, Chongqing University, Chongqing, China
2School of Microelectronic and Communication Engineering, Chongqing University, Chongqing, China
3Department of Automatic Test and Control, Harbin Institute of Technology, Harbin, China
4College of Computer Science, Chongqing University, Chongqing, China
5Chengdu Surveying Geotechnical Research Institute Co. Ltd.of MCC, Chengdu, China
Oral Session 16: AI in Radar Signal Processing

Time:  13: 30 - 15:30, December 12, 2019
Place: Function Room 4-3, B1 of Hotel
Chairs: Prof. Shipeng Li, IFLYTEK CO., LTD, China
       Prof. Caiming Qiu, Shanghai Jiao Tong University, China

F1194  FAST SUPER-RESOLUTION 3D SAR IMAGING USING AN UNFOLDED DEEP NETWORK
Jingkun Gao¹,²*, Yu Ye¹, Shizhong Li¹, Yuliang Qin², Xunzhang Gao², Xiang Li²
¹TH Satellite Center of China, Beijing, China
²College of Electronic Science and Technology, National University of Defense Technology, Changsha, China

F2535  DEEP NEURAL NETWORK FOR DOA ESTIMATION WITH UNSUPERVISED PRETRAINING
Liu-Li Wu¹*, Zhang-meng Liu¹, Zhi-tao Huang¹, Gui-zhou Wu¹
¹State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information System, National University of Defense Technology (NUDT), Changsha, China

F1754  CLASSIFICATION AND IDENTIFICATION OF MICRO-DOPPLER SIGNATURES OF PEDESTRIAN AND CYCLISTS USING SIMULATED DATA AND ELM
Lin Wang¹, Yilong Lu¹*
¹School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore

F1201  SMALL BOAT DETECTION FOR RADAR IMAGE DATASETS WITH YOLO V3 NETWORK
Guanqing Li*, Zhiyong Song, Qiang Fu
College of Electronic Science, National University of Defense Technology, Changsha, China

F1271  RADAR SIGNAL RECOGNITION BASED ON SQUEEZE-AND-EXCITATION NETWORKS
Qizhe Qu¹,², Shunjun Wei²*, Hao Su², Mou Wang², Jun Shi², Xiaojun Hao¹
¹State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information System (CEMEE), Luoyang, 471003, China
²University of Electronic Science and Technology of China, Chengdu, 611731, China

F1133  RESEARCH ON ELECTRONIC JAMMING IDENTIFICATION BASED ON CNN
Qingyuan Zhao¹, Yang Liu¹, Linjie Cai¹, Yaobing Lu¹
¹Beijing Insititute of Radio Measurement, Beijing, China
Oral Session 17: Radar Signal Processing

Time: 13: 30 - 15:30, December 12, 2019
Place: Function Room 4-1, B1 of Hotel
Chairs: Prof. Zengping Chen, Sun Yat-sen University, China
        Dr. Hao Shi, Beijing Institute of Technology, China

13:30 PROGRESS AND APPLICATION OF HOLOGRAPHIC RADAR SIGNAL PROCESSING (INVITED TALK)
Zengping Chen
Sun Yat-sen University

J3268 RADAR ANTI-RETRANSMITTED JAMMING TECHNOLOGY BASED ON AGILITY WAVEFORMS
13:50 Hongyu Wang 1,2*, Xinkun Yang 1,2, Yang Li 1,2,3
1 Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China
2 Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing 100081, China
3 Beijing Institute of Technology Chongqing Innovation Center, Chongqing 401120, China

J3512 JOINT RADAR-COMMUNICATION SYSTEM DESIGN VIA FH CODE SELECTION AND PSK MODULATION
14:10 Jing Xu 1, Xiangrong Wang 1*
1 School of Electronic and Information Engineering, Beihang University, Beijing, China

J3186 A RANGE AND VELOCITY AMBIGUITY RESOLUTION METHOD BASED ON AMBIGUITY MATRIX COMPLETION AND ELIMINATION WITH LOW SNR
14:30 Jiang Zhu 1, Yu Li 1, Chongdi Duan 1, Weiwei Wang 1, Cai Wen 2*, Yan Huang 3
1 Xi’an Institute of Space Radio Technology, Xi’an, China
2 School of Information Science and Technology, Northwest University, Xi’an, China
3 State Key lab of Millimeter Waves, Southeast University, Xi’an, China

J1248 INFORMATION THEORY FOR FUTURE DETECTION SYSTEM CONSTRUCTION
14:50 Chunxia Li 1, Jianjun Ge 1*, Mingxing Li 2
1 Information Science Academy of China Electronics Technology Group Corporation, Beijing, China
2 The 15th Research Institute of China Electronics Technology Group Corporation, Beijing, China

J3257 IMPLEMENTATION OF HIGH RESOLUTION DIGITAL PULSE WIDTH MODULATOR BASED ON FPGA
15:10 Kun Cheng 1*
1 Department of Modern Physics, University of Science and Technology of China, Hefei, China
Oral Session 18: Joint Wireless Communication and Radar Sensing

Time: 13: 30 - 15: 50, December 12, 2019
Place: Function Room 2-2, B2 of Hotel
Chairs: Prof. Qiang Li, the 27th Research Institute of China Electronics Technology Group Corporation, China
        Prof. Xingdong Liang, Institute of Electronics, Chinese Academy of Sciences, China

13: 30  JOINT RADAR SENSING AND WIRELESS COMMUNICATION: OPPORTUNITIES AND CHALLENGES (INVITED TALK)
        Xingdong Liang
        Institute of Electronics of the Chinese Academy of Sciences

13: 50  NEW TECHNOLOGY OF MULTIFUNCTIONAL INTEGRATED SIGNAL PROCESSING MICROSYSTEM (INVITED TALK)
        Yinghui Quan
        Xidian University

14: 10  AGILITY AND INDEX MODULATION: A NEW APPROACH FOR DUAL FUNCTION RADAR COMMUNICATION (INVITED TALK)
        Yimin Liu
        Tsinghua University

D41081  MULTIDIMENSIONAL WAVEFORMS FOR JOINT WIRELESS COMMUNICATION AND HIGH RESOLUTION SAR SYSTEMS
        Jie Wang
        Nanjing University of Information Science & Technology

E7432  RADAR NETWORK PERFORMANCE ANALYSIS BASED ON EM SIGNAL DISTRIBUTION MODELING
        Feifeng Liu
        Beijing Institute of Technology

N01067  RRAM-BASED FLOATING-POINT IN-MEMORY-COMPUTING ARCHITECTURE FOR HIGH THROUGHPUT SIGNAL PROCESSING
        Yufeng Xie
        Fudan University

D41094  THREE-DIMENSIONAL MULTIPLE ACCESS METHOD FOR JOINT RADAR AND COMMUNICATION ENABLED V2X NETWORK
        Zhiqing Wei
        Beijing University of Posts and Telecommunications
Oral Session 19: Statistical Signal Processing

Time: 16: 30 - 18: 30, December 12, 2019
Place: Function Room 4-2, B1 of Hotel
Chairs: Prof. Jinwen Ma, Peking University, China
        Prof. Wei Li, Beijing Institute of Technology, China

16: 30  SAMPLING THEOREM FOR TWO-DIMENSIONAL FRACTIONAL FOURIER TRANSFORM (INVITED TALK)
        Ahmed I. Zayed
        DePaul University-Chicago

K1615  A MODIFIED S TRANSFORM WITH ADJUSTABLE WINDOW FUNCTION
        16: 50  Bixuan Jiao1, Yibin Rui1*, Meng Gao1, Haifeng Fei1, Qing Yu1
        1Nanjing University of Science and Technology, Nanjing, China

K2171  TARGET DETECTION WITH VECTOR BUNDLE MODEL OF
        17: 10  CEMS: L1-NORM VERSUS L∞-NORM
        Hao Wu, Yongqiang Cheng*
        College of Electronic Science, National University of Defense Technology, Changsha, China

K2420  RANGE STATISTICAL RESOLUTION LIMIT OF TWO CLOSE-SPACED TARGETS BASED ON THE ASYMPTOTIC DISTRIBUTION OF GLRT
        17: 30  Yunlei Zhang1,2*, Jianbin Lu1, Shusen Tian1, Yuan Xie2, Jun Tang2
        1School of Electronic Engineering, Navy University of Engineering Wuhan, China
        2Department of Electronic Engineering, Tsinghua University, Beijing, China

K2500  COVARIANCE MATRIX ESTIMATION IN COMPOUND-GAUSSIAN SEA CLUTTER WITH DISCRETE SPIKES
        17: 50  Hao DING1, Ningbo LIU1,2*, Yong HUANG1, Yunlong DONG1, Jian GUAN1
        1Naval Aviation University, NAU, Yantai, Shandong, P.R. China
        2No.23 Institute of the Second Academy, CASIC, Beijing, P.R. China

K2788  A NOVEL RADAR MOVING TARGET CLASSIFICATION AND RECOGNITION TECHNOLOGY
        18: 10  Chunhua Zhou1,2, Liang Gao1,2*, Qian Chen1,2, Yifeng Zhao1,2, Jiejun Yin1,2, Huiting Xia1,2
        1Shanghai Radio Equipment Research Institute, Shanghai, China
        2Shanghai Engineering Research Center of Target Identification and Environment Perception, Shanghai, China
Oral Session 20: Remote Sensing Target Detection II

Time: 16:30 - 18:30, December 12, 2019
Place: Function Room 2-1, B2 of Hotel
Chairs: Prof. Yachao Li, Xidian University, China
        Prof. Yongzhen Li, National University of Defense Technology, China

16:30 TARGET DETECTION METHOD BASED ON RADAR POLARIZATION CHARACTERISTICS AND ITS APPLICATION (INVITED TALK)
Longfei Shi
National University of Defense Technology

16:50 SAR TARGET DETECTION AND DISCRIMINATION IN COMPLEX SCENES (INVITED TALK)
Lan Du
Xidian University

17:10 IMAGING ALGORITHM AND POSITION TECHNOLOGY STUDY ON BISTATIC FORWARD-LOOKING SAR (INVITED TALK)
Yachao Li
Xidian University

D4298 CLASSIFICATION OF FOD TARGETS BASED ON POLARIMETRIC CHARACTERISTICS
17:30
Yangliang Wan1,2, Fei Qin1,2*, Yunlong Liu2, Xingdong Liang2
1School of Electronics, Electrical and Communication Engineering, University of Chinese Academy of Sciences, Beijing, China
2National Key Lab of Microwave Imaging Technology, Institute of Electronics, Chinese Academy of Sciences, Beijing, China

D4099 A CONTEXT-AWARE TRACKING METHOD FOR AERIAL VIDEOS
17:50
Fukun Bi1, Mingyang Lei1*, Zhihua Yang1, Jinyuan Hou1, Jie Zhang1
1School of Information Science and Technology, North China University of Technology, Beijing, China

D5382 A DECEPTIVE MOVING TARGET GENERATION BASED ON CROSS PRODUCT MODULATION
18:10
Lixin Liu, Shiqi Xing, Bo Pang, Dahai Dai, Yongzhen Li
State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information System National University of Defense Technology Changsha, China
Oral Session 21: Sparse Array & Signal Processing

Time: 16: 30 - 18: 30, December 12, 2019
Place: Function Room 1, B2 of Hotel
Chairs: Prof. Hai Liu, Guangzhou University, China
        Prof. Yingsong Li, Harbin Engineering University, China

16: 30 SPARSE-AWARE SIGNAL PROCESSING AND ITS APPLICATIONS (INVITED TALK)
        Yingsong Li
        Harbin Engineering University

E5123 SECURE TRANSMIT OPTIMIZATION BASED ON QOS FOR MISOMES CHANNEL WITH ARTIFICIAL NOISE AIDED
16: 50 Xiang Gao, Yong Li, Wei Cheng, Ge Shi, Penglu Liu, Yi Zheng
        School of Electronics and Information, Northwestern Polytechnical University, Xi’an, Shaanxi, China

E5389 JOINT DESIGN OF SPARSE ARRAY SPARSE PULSE TRAIN AND STAP FOR MIMO RADAR WITH CO-LOCATED ANTENNAS
17: 10 Wanxin Shi¹, Qian He¹,*, Rick S. Blum²
        ¹University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China
        ²Lehigh University, Bethlehem, USA

E1206 ROBUST SPARSE ARRAYS WITH MULTIPLE-FOLD REDUNDANT DIFFERENCE COARRAYS
17: 30 Dong Zhu¹, Gang Li¹
        ¹Department of Electronic Engineering, Tsinghua University, Beijing 100084, China

E1214 FOURTH-ORDER CUMULANTS USING SPARSE BAYESIAN LEARNING
17: 50 Rui Guo¹,*, Jin Meng¹, Fangmin He¹, Yue Zhang²
        ¹National Key Laboratory on Vessel Integrated Power System Technology, Naval University of Engineering, Wuhan, China
        ²ATR, National University of Defense Technology, Changsha, China

E1536 DIRECTION FINDING WITH PARTIALLY CORRUPTED DATA BASED ON OPTSPACE ALGORITHM
18: 10 Shang-Ling Deng, Ping Chu, Bin Liao*
        College of Electronics and Information Engineering, Shenzhen University, Shenzhen, China
Oral Session 22: GNSS Signal Processing and Positioning

Time: 16: 30 - 18: 30, December 12, 2019
Place: Function Room 4-3, B1 of Hotel
Chairs: Prof. Gérard Lachapelle, University of Calgary, Canada
Dr. Tao Lin, UniStrong, China

16: 30  TOWARDS GLOBAL INSTANTANEOUS DECIMETER-LEVEL POSITIONING USING MULTI-CONSTELLATION AND MULTI-FREQUENCY GNSS (INVITED TALK)
Jianghui Geng
Wuhan University

16: 50  A PROPOSED UNIVERSAL ARCHITECTURE FOR MULTI-SOURCE DEEPLY-COUPLED GNSS RECEIVER (INVITED TALK)
Xiaoji Niu
Wuhan University

17: 10  BEIDOU-BASED NEXT GENERATION TRAIN CONTROL (INVITED TALK)
Baigen Cai
Beijing Jiaotong University

17: 30  WIDE AREA NANOSECOND TIME SYNCHRONIZING SYSTEM BASED ON BDS (INVITED TALK)
Chuang Shi
Beihang University

17: 50  THE PROGRESS AND TREND OF A-GNSS/A-BDS(INVITED TALK)
Yidong Lou
Wuhan University

P2304  RESEARCH ON POST-CORRELATION DEDUCTION METHOD FOR SPOOFING DETECTION
18: 10  
Li Cheng1*, Sufei Zhou2, Jiansheng Zheng1
1Electronic Information school of Wuhan University, Wuhan, China
2GNSS Research center of Wuhan University, Wuhan, China
Oral Session 23: Neural Network Design & Implementation

Time: 16:30 - 18:30, December 12, 2019
Place: Function Room 4-I, B1 of Hotel
Chairs: Prof. Li Du, Nanjing University, China
Dr. Yupei Wang, Beijing Institute of Technology, China

16:30 DESIGN OF CONVOLUTIONAL NEURAL NETWORK ACCELERATOR IN EDGE DEVICE (INVITED TALK)
Li Du
Nanjing University

J4066 FPGA IMPLEMENTATION OF HIGH-THROUGHPUT, LOW-LATENCY COMPLEX LMS ALGORITHM
Yongcai Liu, Songhu Ge, Jinling Xing, Zhongpu Cui, Jin Meng
National Key Laboratory of Science and Technology on Vessel Integrated Power System, Naval University of Engineering

J8071 AN ENERGY EFFICIENT CARRY-FREE INNER PRODUCT UNIT
17:10 Wen Yan1*, Miloš D. Ercegovac2
1Key Laboratory of Technology in Geo-spatial Information Processing and Application System, Institute of Electronics, Chinese Academy of Sciences, Beijing, China
2Computer Science Department, University of California, Los Angeles, CA, USA

J4145 APPLYING CONVOLUTIONAL NEURAL NETWORK FOR OBJECT DETECTION ON FT-MATRIX 7002 DSP
17:30 Qiang Zhang1, Xiao Hu1*, Xi Tian2, Siyu Lei3
1,2College of Computer, National University of Defence Technology, Changsha, China
3College of Economics and Management, Chang’an University, Xi’an, China

J6816 FPGA-BASED ACCELERATOR FOR CONVOLUTION OPERATIONS
17:50 Yunfei Cao1, Xin Wei1, Tingting Qiao1, He Chen2*
1Beijing Key Laboratory of Embedded Real-Time Information Processing Technology, Beijing, China
2Beijing Key Laboratory of Embedded Real-Time Information Processing Technology, Beijing Institute of Technology,
5South Zhongguancun Street, Haidian District, Beijing, China
J3291 AN OPTIMIZED PARALLEL PULSE COMPRESSION
18: 10 ALGORITHM BASED ON MULTI-CORE DSP
Jian Shen1*, Zhicheng Wang2, Hanxi Zhao1, Zhenhua Tang1, Shuangshuang Li1, Fen Li1
1The Fifth Laboratory, Shanghai Radio Equipment Research Institute, Shanghai, China
2School of Electronic Information and Electrical Engineering, Shanghai JiaoTong University, Shanghai, China

Oral Session 24: Remote Sensing Data Processing

Time: 16: 30 - 18: 30, December 12, 2019
Place: Function Room 2-2, B2 of Hotel
Chairs: Prof. Tao Zeng, Beijing Institute of Technology, China
Prof. Yong Wang, Harbin Institute of Technology, China

16: 30 A PARAMETRIC IMAGING METHOD FOR EDGE RECOVERY FROM SYNTHETIC APERTURE RADAR ECHO (INVITED TALK)
Tao Zeng
Beijing Institute of Technology

16: 50 SHIPBORNE INVERSE SYNTHETIC APERTURE RADAR IMAGING OF SHIP TARGET (INVITED TALK)
Yong Wang
Harbin Institute of Technology

17: 10 IMAGING METHODS FOR BISTATIC FORWARD-LOOKING SAR MOUNTED ON HIGH-SPEED MANEUVERING PLATFORMS (INVITED TALK)
Junjie Wu
University of Electronic Science and Technology of China

D5934 HIGH RESOLUTION MULTIPASS AIRBORNE SAR TOMOGRAPHY IN URBAN AREAS
17: 30 JINWEI XIE1*, ZHENFANG LI1, ZHIBIN WANG2
1National Laboratory of Radar Signal Processing, Xidian University, Xi’an, China
2Beijing Institute of Spacecraft System Engineering, Beijing, China

D4768 CRITICAL AND OPTIMAL BASELINE OF SINGLE-PASS SINGLE-ANTENNA SQUINT ANGLE AIRBORNE INSAR
17: 50 PENGBO WANG1*, HUAPING XU1, SHUO LI1
1School of Electronics and Information Engineering, Beihang University, Beijing, China
D4325  A 3D RECONSTRUCTION METHOD OF MOUNTAIN AREAS FOR TOMOSAR
18: 10
Xiaowan Li¹,²,³, Xingdong Liang¹,², Fubo Zhang¹,², Xiangxi Bu¹,², Yangliang Wan¹,²,³,
Xingdong Liang¹,²,³
¹Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing, China
²National Key Lab of Mocrowave Imaging Technology, Beijing, China
³School of Electronics, Electrical and Communication Engineering, University of Chinese Academy of Sciences, Beijing, China

Oral Session 25: Target Detection in Acoustic Systems

Time: 08: 00 - 10: 00, December 13, 2019
Place: Function Room 4-2, B1 of Hotel
Chairs: Prof. Xiaojun Qiu, University of Technology Sydney, Australia
        Prof. Xueli Sheng, Harbin Engineering University, China

A4043  A METHOD OF UNDERWATER TARGET DETECTION VIA NON-NEGATIVE MATRIX FACTORIZATION
08: 00
Jingwei Yin¹,²,³, Bing Liu¹,²,³, Guangping Zhu¹,²,³, Longxiang Guo¹,²,³
¹Acoustic Science and Technology Laboratory, Harbin Engineering University, Harbin, China
²Key Laboratory of Marine Information Acquisition and Security (Harbin Engineering University), Ministry of Industry and Information Technology, Harbin, China
³College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin, China

A4238  UNDERWATER TARGET RECOGNITION METHOD BASED ON CONVOLUTION AUTOENCODER
08: 20
Yuechao Chen¹, Jintao Shang
Science and Technology on Sonar Laboratory, Hangzhou Applied Acoustics Research Institute, Hangzhou, China

A4407  A NEW APPROACH OF RECOGNIZING THE PROPELLER BLADE NUMBERS BASED ON HARMONIC DISTORTIONS
08: 40
Xiaopeng Kong¹, Zhixiang Yao, Jinhua Hu
Naval University of Engineering, Wuhan, P.R. China

A4416  AN EXPERIMENTAL DEMONSTRATION OF DETECTION OF ACOUSTIC ABERRATION CAUSED BY SUBMERGED INTRUDER IN LITTORAL WATER BASED ON WRELAX-NRTR
09: 00
Shuaijing Liu¹,², Feng Xu¹,²,³, Juan Yang¹,², Hao Tang³
¹Institute of Acoustics, Chinese Academy of Sciences, Beijing, China
²University of Chinese Academy of Sciences, Beijing, China
³Hangzhou Applied Acoustics Research Institute, Hangzhou, China
A4780  RESEARCH ON TARGET DETECTION AND SEGMENTATION IN FORWARD LOOKING MULTI-BEAM SONAR IMAGES
Deze Zhang, Wei Fan, Sai Zeng
National Key Laboratory of Science and Technology on Underwater Acoustic Antagonizing, Shanghai, China

A3240  EXPERIMENTAL STUDY ON DISTORTION OF SOUND ECHO REFLECTED BY A CYLINDRICAL OBJECT LOCATED IN UNDERWATER MULTI-PATH CHANNEL
Wei Sun, Fangyong Wang, Hao Tang, Jilin Zha
Science and Technology on Sonar Laboratory, Hangzhou Applied Acoustics Research Institute, Hangzhou, China

Oral Session 26: Remote Sensing Intelligence Processing
Time: 08:00 - 10:00, December 13, 2019
Place: Function Room 2-1, B2 of Hotel
Chairs: Prof. Turgay Celik, University of Witwatersrand, South Africa
Prof. Junjie Wu, University of Electronic Science and Technology of China, China

08:00  DEEP LEARNING IN REMOTE SENSING (INVITED TALK)
Turgay Celik
Univ. of Witwatersrand

08:20  MULTI-ASPECT SAR TARGET RECOGNITION BASED ON DEEP RECURRENT LEARNING IN RESOURCE-CONSTRAINED ENVIRONMENTS (INVITED TALK)
Fan Zhang
Beijing University of Chemical Technology

D4429  DEEP TRANSFER LEARNING BASED ON GENERATIVE ADVERSARIAL NETWORKS FOR SAR TARGET RECOGNITION WITH LABEL LIMITATION
Wei Zhang¹, Yongfeng Zhu¹*, Qiang Fu¹
¹National Key Laboratory of Science and Technology on ATR, College of Electronic Science, National University of Defense Technology (NUDT), Changsha, China
D1476  EVALUATION OF DIFFERENT APPROACHES OF CONVOLUTIONAL NEURAL NETWORKS FOR LAND USE AND LAND COVER CLASSIFICATION BASED ON HIGH RESOLUTION REMOTE SENSING IMAGES
Jianwei Ma¹, Yayong Sun¹, Guohui Deng²*, Shifeng Huang¹, Yiting Tao², He Zhu¹, Qiang Teng¹, Xianchao Meng⁴
¹Research Center of Flood and Drought Disaster Reduction of the Ministry of Water Resources, China Institute of Water Resources and Hydropower Research, Beijing, China
²School of Remote Sensing and Information Engineering, Wuhan University, Wuhan, China
³School of Management and Economics, Beijing Institute of Technology, Beijing, China
⁴Shenzhen Huakong Seg Company Limited, Shenzhen, China

D4349  FEATURE-LOSS DOUBLE FUSION SIAMESE NETWORK FOR DUAL-POLARIZED SAR SHIP CLASSIFICATION
Yunlong Xi, Gang Xiong, Wenxian Yu
Shanghai Key Laboratory of Intelligent Sensing and Recognition, Shanghai Jiao Tong University, Shanghai, China

D4773  POLSAR IMAGE CLASSIFICATION BASED ON DEEP CNN AND ADABOOST
Xiaofeng Tan¹, Ming Li¹*, Peng Zhang¹, Yan Wu², Yinyin Jiang¹, Hao Sun¹
¹National Laboratory of Radar Signal Processing, Xidian University, Xi’an, China
²School of Electronic Engineering, Xidian University, Xi’an, China

Oral Session 27: Target Localization and DOA Estimation

Time:  08: 00 - 10: 00, December 13, 2019
Place: Function Room 2-2, B2 of Hotel
Chairs: Prof. Xiaoping Zhang, Ryerson University, Canada
        Prof. Quanhua Liu, Beijing Institute of Technology, China

08: 00  ADVANCES IN PASSIVE LOCALIZATION AND TRACKING (INVITED TALK)
        Xiaoping Zhang
        Ryerson University
JOINT DOD AND DOA ESTIMATION FOR BISTATIC MIMO RADAR WITH UNKNOWN SPATIALLY COLORED NOISE: A TENSOR COMPLETION APPROACH*
Xiaohong Li¹, Ruibo Ding¹, Fangqing Wen²*
¹National Demonstration Center for Experimental Electrical & Electronic Education, Yangtze University, No.1 of Nanhuan Rd, Jingzhou, China
²Electronics & Information School of Yangtze University, No.1 of Nanhuan Rd, Jingzhou, China

DIRECTION OF ARRIVAL ESTIMATION VIA JOINT SPARSE BAYESIAN LEARNING FOR BI-STATIC PASSIVE RADAR
Xinyu Zhang¹*, Kai Huo¹, Yongxiang Liu¹, Weidong Jiang¹, Xiang Li¹
¹College of Electronic Science, National University of Defense Technology, Changsha, China

ACCURATE DOA ESTIMATION BASED ON REAL-VALUED SINGULAR VALUE DECOMPOSITION
Hui Cao¹*, Qi Liu²,
¹School of Information Engineering, Wuhan University of Technology, Wuhan, China
²Department of Electrical Engineering, City University of Hong Kong, Hong Kong, China

ANALYSIS OF GRATING SPECTRUM BY USING MUSIC FOR SUB-ARRAYS
Jiaolong Shan¹*, Fengfeng Chen¹, Weina Guo¹
¹AVIC Leihua Electronic Technology Research Institute, Wuxi, China

GRID EVOLUTION: AN ITERATIVE REWEIGHTED ALGORITHM FOR OFF-GRID DOA ESTIMATION WITH GAIN/PHASE UNCERTAINTIES
Wu Xiaochuan¹, Hu Bin¹, Chen Qiushi¹, Zhang Xin¹, Yang Qiang¹, Deng Weibo¹*
¹School of Electronic and Information Engineering, Harbin Institute of Technology, Harbin, China

Oral Session 28: Signal Processing Algorithm Implementation

Time: 08: 00 - 10: 00, December 13, 2019
Place: Function Room 4-3, B1 of Hotel
Chairs: Prof. Lianlin Li, Peking University, China
        Dr. Yin Zhuang, Peking University, China

08: 00  UNSUPERVISED MICROWAVE VISION : MAKE INVISIBLE VISIBLE (INVITED TALK)
        Lianlin Li
        Peking University
J3202 SIGNAL PROCESSING SYSTEM OF BACK-PROJECTION ALGORITHM WITH MULTI GPUS
08: 20
Liu Xiaoguang
Brainware Terahertz Information Technology Co., Ltd., Hefei, China

J3031 AN IMPROVED HARMONIC SUPPRESSION METHOD BASED ON ADAPTIVE COMPENSATION ALGORITHM FOR MONOBIT RECEIVER
08: 40
Muyao Yu¹*, Shengbo Dong¹
¹Beijing Institute of Remote Sensing Equipment, Beijing, China

J3259 A METHOD OF TDOA MEASUREMENT IN MULTI-STATION LOCATING SYSTEM
09: 00
Wangjie Chen¹²*, Huancheng Su¹, Weiqiang Zhu¹, Hui Guo¹, Jianwei Zhang¹, Panpan Zhang¹
¹Nanjing Electronic Equipment Institute, No. 99 Jianheng Road, Nanjing, China
²Nanjing University of Science and Technology, No.200 Xiao Lingwei Street, Nanjing, China

J3184 TWO DIMENSION DOA ESPRIT ALGORITHM BASED ON PARALLEL COPRIME ARRAYS AND COMPLEMENTARY SEQUENCE IN MIMO COMMUNICATION SYSTEM
09: 20
Shufeng Li¹²*, Yuan Zhang¹, Robert Edwards²
¹School of Information and Communication Engineering, Communication University of China, Beijing, China
²The Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, Loughborough, Leicestershire, LE11 3TU, UK

J3866 THE RECONFIGURABLE PIPELINED VARIABLE-POINT FFT PROCESSOR DESIGN
09: 40
Jiale Wang¹, Yizhuang Xie²*, Bingyi Li¹, Chen Yang¹, Shankang Hu¹
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing 100081, China

Oral Session 29: Waveform Design and Application

Time: 08: 00 - 10: 00, December 13, 2019
Place: Function Room 4-1, B1 of Hotel
Chairs: Prof. Ningbo Liu, Naval Aviation University, China
        Prof. Wei Li, Beijing Institute of Technology, China

08: 00 FRACTIONAL SIGNAL PROCESSING: THEORY AND APPLICATIONS (INVITED TALK)
Ran Tao
Beijing Institute of Technology
K5499  ALIASING ERROR ESTIMATION OF FRACTIONAL FOURIER TRANSFORM BASED ON WINDOWED SAMPLES
Fang-Jia Yan¹, Bing-Zhao Li²*  
¹School of Mathematics and Statistics, Beijing Institute of Technology, Beijing, China  
²Beijing Key Laboratory on MCAACI, Beijing Institute of Technology, Beijing, China

K3067  LPI-BASED OFDM RADAR WAVEFORM DESIGN IN A COOPERATIVE RADAR-COMMUNICATIONS SYSTEM
Chenguang Shi¹², Yijie Wang³, Fei Wang¹, Sana Salousz³ and Jianjiang Zhou¹  
¹Key Laboratory of Radar Imaging and Microwave Photonics (Nanjing Univ. Aeronaut. Astronaut.), Ministry of Education, Nanjing 210016, China  
²Science and Technology on Electro-Optic Control Laboratory, Luoyang 471009, China  
³School of Engineering and Computing Sciences, Durham University, Durham, DH1 3LE, U.K.

K3098  MARITIME SMALL TARGETS DETECTION METHOD FOR PASSIVE BISTATIC RADAR USING NON-COOPERATIVE RADAR AS ILLUMINATOR OF OPPORTUNITY
Song Jie *, Wang Guoqing, Zhang Caisheng  
Research Institute of Information, Naval Aviation University, YanTai, China

K3132  GOLAY COMPLEMENTARY WAVEFORM DESIGN FOR ENHANCED DOPPLER RESOLUTION
Jiahua Zhu¹, Yanxin Ma¹, Pengzheng Lei¹, Chongyi Fan², Shuang Yi³, Hongtu Xie⁴  
¹College of Meteorology and Oceanology National University of Defense Technology, Changsha, P. R. China  
²College of Electronic Science National University of Defense Technolog, Changsha, P. R. China  
³School of Engineering RMIT University Melbourne, Australia  
⁴School of Electronics and Communication Engineering Sun Yat-sen University, Guangzhou, P. R. China

K3227  VARIABLE VELOCITY AMBIGUITY NUMBERS COMPENSATION METHOD FOR NEAR SPACE TARGET DETECTION
Kaina Zhang, Tao Shan*, Hongchi Zhang  
School of Information and Electronics, Beijing Institute of Technology, Beijing, P.R. China  
School of Electronics and Communication Engineering Sun Yat-sen University, Guangzhou, P. R. China
Oral Session 30: Civilian Radar

Time: 08:00 - 10:00, December 13, 2019
Place: Function Room 1, B2 of Hotel
Chairs: Prof. Gang Li, Tsinghua University, China
        Dr. Julien Le Kernec, University of Glasgow, UK

08:00  CLASSIFICATION OF ROAD USERS USING LOW-COST RADAR SENSORS AND MACHINE INTELLIGENCE (INVITED TALK)
        Yilong LU
        Nanyang Technological University

08:20  RADAR MICRO-DOPPLER ANALYSIS FOR HUMAN ACTIVITY SENSING (INVITED TALK)
        Gang Li
        Tsinghua University

08:40  INSECT RADAR SIGNAL PROCESSING AND EXPERIMENTAL VERIFICATION (INVITED TALK)
        Cheng Hu
        Beijing Institute of Technology

09:00  RADAR SENSING IN ASSISTED LIVING (INVITED TALK)
        Julien Le Kernec
        University of Glasgow

09:20  BIRD DETECTION SYSTEM BASED ON MIMO RADAR (INVITED TALK)
        Xiaopeng Yang
        Beijing Institute of Technology

09:40  FREQUENCY DIVERSE ARRAY TIME VARIANCE AND ITS POTENTIAL APPLICATIONS (INVITED TALK)
        Wenqin Wang
        University of Electronic Science and Technology of China
Oral Session 31: Remote Sensing System Techniques

Time: 10: 30 - 12: 30, December 13, 2019
Place: Function Room 2-1, B2 of Hotel
Chairs: Prof. Jie Chen, Beihang University, China
        Prof. Qian He, University of Electronic Science and Technology of China, China

10: 30  HIGH-RESOLUTION SPACEBORNE SAR SYSTEM WITH AZIMUTHAL MULTIPLE ANGLE OBSERVATION (INVITED TALK)
        Jie Chen
        Beihang University

10: 50  HYPERSPECTRAL REMOTE SENSING: ESSENCE, USES AND SOME EXAMPLES
        Yongchao Zhao
        Institute of Electronics of the Chinese Academy of Sciences

11: 10  DETECTION AND ESTIMATION USING QUANTIZED CLOUD MIMO RADAR MEASUREMENTS (INVITED TALK)
        Qian He
        University of Electronic Science and Technology of China

11: 30  INVESTIGATION OF DETECTION AND CLASSIFICATION FOR METEOROLOGICAL TARGETS WITH AIRBORNE WEATHER RADAR (INVITED TALK)
        Hai Li
        Civil Aviation University of China

D2180  MULTIBAND PASSIVE ISAR PROCESSING BASED ON BAYESIAN COMPRESSIVE SENSING
11: 50  Ran Zhang, Xia Bai*, Juan Zhao
        School of Information and Electronics, Beijing Institute of Technology, Beijing, P.R. China

D2222  A DECEPTION JAMMING APPROACH FOR SPACEBORNE SAR IMAGING USING FREQUENCY DIVERSE ARRAY
12: 10  Zhibin Wang¹, Bang Huang¹²*, Running Zhang¹, Yu Zhu¹, Tianxing Liao², Lei Liu¹
        ¹Beijing Institute of Spacecraft System Engineering, Beijing, China
        ²School of Information and communication, University of Electronic Science and Technology of China, Chengdu, China
Oral Session 32: Bio-imaging and Biomedical Signal Processing

Time: 10:30 - 12:30, December 13, 2019
Place: Function Room 4-2, B1 of Hotel
Chairs: Prof. Zeyang Xia, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China
        Prof. Wenbin Shi, Beijing Institute of Technology, China

10:30 COMPUTATIONAL BIOMECHANICS AND ROBOTICS FOR PRECISION ORTHODONTICS (INVITED TALK)
Zeyang Xia
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

10:50 MEASURING MULTISCALE COMPLEXITY IN HUMAN SLEEP ELECTROENCEPHALOGRAPHY (INVITED TALK)
Wenbin Shi
Beijing Institute of Technology

I2575 UNSUPERVISED CONTOUR-AWARE REGISTRATION NETWORK FOR EYEBALL B-MODE OCULAR ULTRASOUND IMAGES
11:10 Songlin Liu¹, Maolin Pang¹, Sunao Liu¹, Bei Tian², Wenli Yang², Xuejin Chen¹*
¹University of Science and Technology of China, Hefei, Anhui
²Beijing Tongren Hospital, Beijing, China

I2219 ON RETINAL VESSEL SEGMENTATION USING FCN
11:30 Xin Liu, Zhengyao Bai*, Qiong Li
School of Information Science & Engineering, Yunnan University, Kunming, China

I2331 EFFECT OF VARIOUS IMAGE INFORMATION IN POLYP CLASSIFICATION BY DEEP LEARNING WITH SMALL DATASET
11:50 Yi Wang¹*, Xiaodong Chen¹, Huayu Cai¹, Zhengrong Liang²
¹School of Precision Instrument and Opto-Electronics Engineering, Tianjin University, China, Key Laboratory of Opto-Electronics Information Technology (Tianjin University), Ministry of Education, Tianjin, 300072, China
²Department of Radiology, State University of New York, Stony Brook, NY 11794, USA
I2483  BRAIN EXTRACTION FROM MAGNETIC RESONANCE IMAGING USING DEEP NEURAL NETWORK WITH EDGE PRIOR
Zhou Bin\textsuperscript{1}, Linsong Wang\textsuperscript{2}, Zhu Jian\textsuperscript{3}, Jiasong Wu\textsuperscript{1}, Kong Youyong\textsuperscript{1,4,5,}*\textsuperscript{,} Shu Huazhong\textsuperscript{1,4,5}
\textsuperscript{1}School of Computer Science and Engineering, Southeast University, 210096, Sipailou 2, Nanjing, China
\textsuperscript{2}College of Chien-Shiung Wu Honor, Southeast University, Nanjing, China
\textsuperscript{3}Shandong Cancer Hospital, Shandong Academy of Medical Sciences, Jinan, China
\textsuperscript{4}International Joint Laboratory of Infromation Integration, Southeast University, Nanjing, China
\textsuperscript{5}Key Laboratory of Computer Network and Infromation Display and Visualization, Southeast University, Nanjing, China

Oral Session 33: Signal Extraction and Feature Recognition

Time: 10: 30 - 12: 30, December 13, 2019
Place: Function Room 4-3, B1 of Hotel
Chairs: Dr. Xiaolong Chen, Naval Aviation University, China
Pro. Wei Li, Beijing Institute of Technology, China

K3256  A TD-CF PREPROCESSING METHOD OF FMCW RADAR FOR DYNAMIC HAND GESTURE RECOGNITION
Wentai Lei\textsuperscript{1,}*\textsuperscript{,} Xinyue Jiang\textsuperscript{1}, Qianying Tan\textsuperscript{1}, Long Xu\textsuperscript{1}, Ye Zhao\textsuperscript{2}, Tiankun Xu\textsuperscript{2}, Yan Li\textsuperscript{2}, Qingyuan Gu\textsuperscript{3}, Gengye Liu\textsuperscript{3}, Yumei Zhao\textsuperscript{4}, Wenjun Li\textsuperscript{4}
\textsuperscript{1}School of Computer Science and Engineering, Central South University, Changsha, China
\textsuperscript{2}Beijing Mass Transit Railway Operation Co. LTD, Beijing, China
\textsuperscript{3}Time Varying Transmission Co. LTD, Xiangtan, China
\textsuperscript{4}Yewuxuan Communication Technology Co. LTD, Beijing, China

K3403  STUDY ON SCATTERING SIGNATURE SIGNAL MODELING METHOD OF SEA-SURFACE TARGET FOR BI-STATIC SYNTHETIC APERTURE RADAR
DiaoGuijier\textsuperscript{1,2,}*\textsuperscript{,} Ni Hong\textsuperscript{2}, Zhang Yajing\textsuperscript{1}, Zhan Tianming\textsuperscript{4}, Xu Xiaojian\textsuperscript{5}
\textsuperscript{1}Science and Technology on Complex System Control and Intelligent Agent Cooperation Laboratory, Beijing, China
\textsuperscript{2}Beijing Electro-mechanical Engineering Institute, Beijing, China
\textsuperscript{3}Datang Mobile Communication Equipment Co., Ltd., Datang Telecom Group, Beijing, China
\textsuperscript{4}Beijing Aerospace Smart Manufacturing Technology Development Co. Ltd., Beijing, China
\textsuperscript{5}Electronic information engineering college, Beihang University, Beijing, China
K3720  THEORETICAL ANALYSIS FOR EXTENDED TARGET RECOVERY USING RSFRS
11: 10  Lei Wang¹, Tianyao Huang¹, Yimin Liu¹, Huaiying Tan²*,
¹Department of Electronic and Engineering, Tsinghua University, Beijing, China
²Radar Research Institute, Beijing, China

K3736  MAXIMUM LIKELIHOOD AND LEAST SQUARES METHODS,
11: 30  ALGORITHMS AND EXPERIMENTS FOR “SENSING WAVES AND SEEING IMAGES”
Kaifeng Gao¹, Hangfang Zhao²*, Xianyi Gong²
¹Ocean College, Zhejiang University, Zhoushan, China
²College of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China
³Key Laboratory of Ocean Observation-Imaging Testbed of Zhejiang Province Zhoushan, China

K7582  MULTI-TO-TWO-LDA FOR HRRP RADAR TARGET RECOGNITION
11: 50  Lu Yao¹, Lei Han¹*, Jindong Guo¹, Tao Shang²
¹School of Mechanical and Electrical Engineering, Beijing Institute of Technology, Beijing, China
²Equipment Repair Depatrment, Beijing, China

K1379  PANSHARPENING OF MULTISPECTRAL IMAGES BASED ON
12: 10  CYCLE-SPINNING QUINCUNX LIFTING TRANSFORM
Yan Shi¹*, Wanyu Zhou¹, and Wei Li¹
¹Beijing Key Laboratory of Fractional Signals and Systems, School of Information and Electronics, Beijing Institute of Technology, Beijing, China

Oral Session 34: Communications and Networks II

Time: 10: 30 - 12: 30, December 13, 2019
Place: Function Room 4-1, B1 of Hotel
Chairs: Prof. Wenchi Cheng, Xidian University, China
        Prof. Chengwen Xing, Beijing Institute of Technology, China

10: 30  SPACE TERAHERTZ COMMUNICATION (INVITED TALK)
Chengwen Xing
Beijing Institute of Technology

10: 50  THE LOW-RANK CRITERION AND ITS APPLICATIONS IN SPATIAL SPECTRUM ESTIMATION AND OVERSPREAD CHANNEL ESTIMATION (INVITED TALK)
Fangjiong Chen
South China University of Technology
11: 10  SPECTRAL ANALYSIS AND IMAGING TECHNOLOGY BASED ON MULTIMODE FIBER (INVITED TALK)
Zhenming Yu
Beijing University of Posts and Telecommunications.

C5630  CLUSTERING BASED INTERFERENCE ANALYSIS OF GSM-R NETWORK ON DRIVE TEST DATA
Xiang Chen¹²*, Hui Cao¹², Jingxuan Huang³, Zhongfa Li¹², Zesong Fei³
¹School of Electronics and Information Technology, Sun Yat-sen University, Guangzhou 510006, China
²Key Lab of EDA, Research Institute of Tsinghua University in Shenzhen (RITS), Shenzhen 518075, China
³School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China

C2301  MULTIPLE KERNEL INDEPENDENT COMPONENT ANALYSIS FOR ANTI-JAMMING OF COMMUNICATION RADIO
Yu Guo¹*, Jin Meng¹, Songhu Ge¹, Jinling Xing¹, Yaxing Li¹, Hao Wu¹
¹National Key Laboratory of Science and Technology on Vessel Integrated Power System, Naval University of Engineering, Wuhan, China

C5411  A NEW METHOD OF SPECIFIC EMITTER IDENTIFICATION
Liting Sun¹*, Wanlong Zhang¹, Xiang Wang¹, Kaihong Li², Yiwei Guo³, Jiarun Yang⁴
¹State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information System, National University of Defense Technology, Changsha, China
²Unit 78100 of PLA, Chengdu, Sichuan
³Unit 91605 of PLA, Xiamen, Fujian
⁴Unit 32045 of PLA, Xiamen, Fujian

Oral Session 35: Remote Sensing Information Extraction

Time: 10: 30 - 12: 30, December 13, 2019
Place: Function Room 2-2, B2 of Hotel
Chairs: Prof. Bing Zhang, Aerospace Information Research Institute, Chinese Academy of Science, China
        Prof. Ferdinando Nunziata, Università degli Studi di Napoli Parthenope, Italy

10: 30  REMOTELY SENSED BIG DATA: EVOLUTION IN MODEL DEVELOPMENT FOR INFORMATION EXTRACTION (INVITED TALK)
Bing Zhang
Aerospace Information Research Institute, Chinese Academy of Science
ANALYSIS OF THE PERFORMANCE OF METHODS TO ENHANCE THE SPATIAL RESOLUTION OF MEASUREMENTS COLLECTED BY A MICROWAVE PROBE (INVITED TALK)
Ferdinando Nunziata
Università degli Studi di Napoli Parthenope

D4438 AN IMPROVED HYBRID FREEMAN/EIGENVALUE DECOMPOSITION FOR POLARIMETRIC SAR DATA
Borong Sun¹,², Weixian Tan¹,²*, Wei Xu¹,², and Pingping Huang¹,²
¹College of Information Engineering. Inner Mongolia University of Technology, Hohhot, China
²Inner Mongolia Key Laboratory of Radar Technology and Application, Hohhot, China

D1942 AN IMPROVED FEATURE EXTRACTION METHOD BASED ON CONTEXT FEATURES FOR MULTI-SPECTRAL REMOTE SENSING IMAGERY
Na Li¹*, Ruihao Wang¹, Huijie Zhao¹, Huijie Zhao¹, Wei Wei²
¹School of Instrumentation and Optoelectronic Engineering, Beihang University, Beijing, China
²Beijing Mechanical and Electrical Engineering Design Institute

D1163 COMPRESSIVE MULTIDIMENSIONAL HARMONIC RETRIEVAL WITH PRIOR KNOWLEDGE
Yinchuan Li¹,²,³, Xu Zhang¹, Zegang Ding¹,²*, Xiaodong Wang³
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing, China
³Electrical Engineering Department, Columbia University, New York, USA

D1465 PAN-SHARPENING FRAMEWORK BASED ON LAPLACIAN SHARPENING WITH BROVEY
Sarwar Shah Khan¹, Qiong Ran¹*, Muzammil Khan², Zhenyu Ji¹
¹College of Information Science & Technology Beijing University of Chemical Technology Beijing, China
²Department of Computer & Software Technology University of Swat Swat, Pakistan
### Poster Sessions

**Time: 15:30 - 16:30, December 12, 2019**  
**Place: Crowne Grand Ballroom A1**

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**Time: 15:00 - 16:00, December 13, 2019**  
**Place: Crowne Grand Ballroom A1**

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Poster Session 1: Joint Wireless Communication and Radar Sensing

Time: 15: 30 - 16: 30, December 12, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Prof. Qiang Li, the 27th Research Institute of China Electronics Technology Group Corporation, China
Prof. Xingdong Liang, Institute of Electronics, Chinese Academy of Sciences, China

D41047 VTENSOR: USING VIRTUAL TENSORS TO BUILD A LAYOUT-OBLIVIOUS AI PROGRAMMING FRAMEWORK
Feng Yu1,2, Huimin Cui1,2*, Xiaobing Feng1,2
1State Key Laboratory of Computer Architecture, Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China
2University of Chinese Academy of Sciences, Beijing, China

D41093 PERFORMANCE OF JOINT RADAR-COMMUNICATION ENABLED COOPERATIVE UAV NETWORK
Xu Chen1, Zhiqing Wei1, Zixi Fang1, Hao Ma1, Zhiyong Feng1*, Huici Wu1
1Key Laboratory of Universal Wireless Communications, Ministry of Education, Beijing University of Posts and Telecommunications, Beijing, China

Poster Session 2: Speech, Audio, Acoustic and Sonar Processing

Time: 15: 30 - 16: 30, December 12, 2019
Place: Crowne Grand Ballroom-1
Chair: Prof. Feifeng Liu, Beijing Institute of Technology, China

A1072 MULTIPLE ADDITIONAL BIT-RATE CHANNEL-AWARE MODES IN EVS CODEC FOR PACKET LOSS RECOVERY
Chongling Rao1, Shenghui Zhao1*
1School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China

A1120 A MODEL OF K-G MIXED DISTRIBUTION FOR THE REVERBERATION OF HIGH RESOLUTION ACTIVE SONAR IN SHALLOW WATER
Xu Sun*, Ranwei Li
Science and Technology on Sonar Laboratory, Hangzhou Applied Acoustics Research Institute, Hangzhou, China

A1158 MULTI-FORMAT SPEECH PERCEPTION HASHING ALGORITHM BASED ON FREQUENCY BAND VARIANCE
Yibo Huang1*, Yong Wang1
1College of Physics and Electronic Engineering, Northwest Normal University, No.967, Anning East Road, Anning District, Lan Zhou, China
A1274 ROBUST END TO END ACOUSTIC MODEL BASED ON DEEP SIMILARITY NETWORK
Songxue Tian¹, Weize Sun¹*, Lei Huang²
¹College of Electronics and Information Engineering, Shenzhen University, China, Shenzhen
²College of Electronics and Information Engineering, Shenzhen University, China, Shenzhen

A1277 RESEARCH ON ACOUSTIC SCENE CLASSIFICATION BASED ON MULTIPLE MIXED CONVOLUTIONAL NEURAL NETWORKS
Lidong Yang¹, Zhuangzhuang Zhang¹*, Jiangtao Hu¹
¹School of Information Engineering, Inner Mongolia University of Science and Technology, Baotou, China

A1570 DIRECT POSITION DETERMINATION USING TDOA AND FDOA BASED ON VARIABLE BASELINE
Mingbin Li¹,a, Yuanyuan Song²,b, Yijun Li², Luxi Zhang², Zhenzhu Zha², Qiang Yan¹, Qun Wan²,c
¹Sichuan, 611731, Southwest Institute of Electronic Technology
²School of Information and Communication Engineering, University of Electronic Science and Technology of China, Chengdu

A1752 AUDIO SCENE CLASSIFICATION BASED ON GATED RECURRENT UNIT
Lidong Yang¹, Jiangtao Hu¹*, Zhuangzhuang Zhang¹
¹School of Information Engineering, Inner Mongolia University of Science and Technology, Baotou, China

A1822 A DOUBLE-SIDE WSOLA WITH GAIN PREDICTION BASED ON GRU FOR PACKET LOSS CONCEALMENT
Patrick Mugisha¹, Jing Wang¹*, Xiaohan Zhao¹, Zhuoran Li¹, Kai Qian¹,
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China

A1829 A WEIGHTED MULTI-TASK LEARNING APPROACH FOR MANDARIN-ENGLISH CODE-SWITCHING SPEECH RECOGNITION
Shilei Huang¹, Xiao Song¹*, Yi Liu²
¹PKU-HKUST Shenzhen Hong Kong Institution, Shenzhen Hong Kong Institution, Shenzhen, China
²Shenzhen Raisound Technologies, Co., Ltd, Shenzhen, China

A1834 A CHINESE SPEECH RECOGNITION SYSTEM BASED ON ARTICULATORY FEATURES
Shixuan Du¹, Qingran Zhan¹, Yahui Shan¹, Xiang Xie¹,²*
¹Information and Electronics Institute, Beijing Institute of Technology, Beijing, China
²Shenzhen Research Institute, Beijing Institute of Technology, Shenzhen, China
A1926  SPEAKER DIARIZATION FOR MULTI-SPEAKER CONVERSATIONS VIA X-VECTORS  
Yangfan Zhang\textsuperscript{1,2}, Xiao Song\textsuperscript{2}, Jian Zhang\textsuperscript{2*} 
\textsuperscript{1}School of Computer Science and Technology, Anhui University, Hefei, China 
\textsuperscript{2}Peking University Shenzhen Institute, Shenzhen, China

A1940  A COMPARISON OF BACKGROUND NOISE REDUCTION TECHNIQUES FOR SPEECH ENHANCEMENT  
Yuhao Lu and Wasim Ahmad  
James Watt School of Engineering  
University of Glasgow  
Glasgow, United Kingdom, G12 8QQ

A2361  NON-INTRUSIVE SPEECH QUALITY ASSESSMENT BASED ON TUCKER DECOMPOSITION AND DEEP NEURAL NETWORK  
Yahui Shan\textsuperscript{1}, Jing Wang\textsuperscript{1*}, Min Liu\textsuperscript{1}, Yiyu Luo\textsuperscript{1}, Xiang Xie\textsuperscript{1}  
\textsuperscript{1}School of Information and Electronics, Beijing Institute of Technology, Beijing, China

A2724  DESIGN OF SHIP RADIATED NOISE SIGNAL GENERATOR BASED ON FPGA  
Hu Chen\textsuperscript{1*}, Zhang Fengzhen\textsuperscript{1}, Li Guijuan\textsuperscript{1}, Zhang Zhaohui\textsuperscript{1}, Mu Lin\textsuperscript{1}, Hu Wenshuai\textsuperscript{1}  
\textsuperscript{1}Science and Technology on Underwater Test and Control Laboratory, Dalian, China

A3047  A SIGNAL PROCESSING TECHNIQUE FOR LFMCW RADAR  
Qingliang Shen\textsuperscript{1*}  
\textsuperscript{1}Jiangsu Automation Research Institute, LianYunGang, China

A3079  ONE NARROWBAND CROSS-CORRELATOR DETECTOR FOR PASSIVE SONAR  
Shengzeng Zhou\textsuperscript{1*}, Xuanmin Du\textsuperscript{1}, Jinsheng Cheng\textsuperscript{1}  
\textsuperscript{1}Shanghai Marine electronic equipment research institute, 5200 Jindu Road, Minhang District, Shanghai, China

A3100  SEQUENTIAL MONTE CARLO AND PROBABILITY HYPOTHESIS DENSITIES FOR UNDERWATER MULTITARGET TRACKING IN ACTIVE SONOBUOY SYSTEMS  
Pengfei Shao, Qing Li, Lei Wang  
Science and Technology on Sonar Laboratory and Hangzhou Applied Acoustics Research Institute, Hangzhou, China
A3138 RESEARCH ON SEARCHING RATE OPTIMIZATION METHOD OF HPA ACTIVE SONAR
Di Meng¹, Shengzeng Zhou²*
¹Naval Research Academy, Beijing, China
²Shanghai Marine electronic equipment research institute, 5200 Jindu Road, Minhang District, Shanghai, China

A3223 ACCURACY ANALYSIS OF BISTATIC ACTIVE SONAR RANGING
Linfeng Jiang¹, Shengzeng Zhou¹, Delong Sun¹, Linfeng Jiang¹
¹Shanghai Marine Electronic Equipment Research Institute, Shanghai, China

A3336 COGNITIVE RADAR WAVEFORM OPTIMIZATION FOR STEALTH TARGET RCS ESTIMATION
Qing Wang¹, Meng Li¹, Yuzhang Guo¹*
School of Electrical and Information Engineering, Tianjin University, Tianjin, 300072, China

A3342 ANALYTICAL SOLUTION OF ACTIVE NOISE CONTROL IN SOUND FIELD WITH A REFLECTIVE SURFACE
Jingwei Liu¹,², Ran Wang¹,², Yuwei Feng¹,², Xiaolin Wang²*
¹University of Chinese Academy of Sciences, Beijing, China
²Key Laboratory of Noise and Vibration Research, Institute of Acoustics, Chinese Academy of Sciences, No. 21 North 4th Ring Road, Haidian District, Beijing, China

A3360 PERFORMANCE ANALYSIS OF BINAURAL AUDIO RENDERING WITH RECONSTRUCTED HRTF UNDER LINEAR INTERPOLATION AND SSH
Xinyao Wang¹, Jing Wang¹*, Zhaoyu Yan¹, Min Liu¹, Kai Qian¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China

A3384 A METHOD OF SOUND FIELD CONTROL USING BEAM DEFLECTION
Xian Zhang¹, Jianlong Li¹,²*
¹College of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China
²Key Laboratory of Ocean Observation-Imaging Testbed of Zhejiang Province, Zhejiang University, Zhoushan, China

A3435 TARGET GEOMETRIC CONFIGURATION ESTIMATION BASED ON ACOUSTIC SCATTERING SPATIOTEMPORAL CHARACTERISTICS
Li Rui*, An Junying, Cheng Gang
Qingdao Branch, Institute of Acoustic, Chinese Academy of Sciences, No.96 Huizhiqiao Road, Qingdao, China
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<td>¹Science &amp; Technology on Underwater Acoustic Antagonizing Laboratory, Zhanjiang, P. R. China, 524022</td>
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<td>²Northwestern Polytechnical University, Xi’an, P. R. China, 710072</td>
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<td>Yanan Ma¹, Xianbin Cao¹, Xiangrong Wang¹</td>
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<td>Yang Chen¹, Jinxia Wang¹∗, Yun Yu², Xiao Zhang³, Biao Yang¹, Yanping Zhu¹</td>
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<td>¹Department of Information Science and Engineering, Changzhou University, No.1 Gepu Road Wujin District, Changzhou, China</td>
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<td>³College of Computer Science and Technology Jilin University, Changchun, China</td>
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<th>DESIGN OF GROUPED SENSOR GEOMETRY IN SKY-WAVE TIME-DIFFERENCE-OF-ARRIVAL LOCALIZATION SYSTEMS</th>
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<td>Tie-nan Zhang¹,², Xing-peng Mao¹,²∗, He Ma¹,², Yu-han Liu³</td>
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<td>²The Key Laboratory of Marine Environmental Monitoring and Information Processing, Ministry of Industry and Information, Harbin, P. R. China</td>
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<td>³Southeast University, Nanjing, P. R. China</td>
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<td>¹Nanjing Research Institute of Electronic Technology Key Laboratory of Intelligence Technology, CETC, Nanjing, China</td>
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<td>¹College of Meteorology and Oceanology, National University of Defense Technology, Changsha, China</td>
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<td>²State Key Laboratory of Mechanical System and Vibration, Shanghai Jiaotong University, Shanghai, China</td>
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A3632  HORIZONTAL WAVENUMBER ESTIMATION TECHNIQUE BASED ON COMPRESSIVE SENSING IN SHALLOW WATER
Yun Yu¹*, Qing Ling¹, Xuejing Song², Yang Chen³
¹PLA, Beijing, China
²Science and Technology on Sonar Laboratory, Hangzhou Applied Acoustics Research Institute, Hangzhou, China
³Department of Information Science and Engineering, Changzhou University, Changzhou, China

A3705  A CONICAL HELIX ARRAY FOR SMALL AUTONOMOUS UNDERWATER PLATFORMS
Xiaoxiao Sun¹, Hangfang Zhao¹,²*
¹College of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China
²Key Laboratory of Ocean Observation-Imaging Testbed of Zhejiang Province, Zhoushan, China

A3767  STUDY ON OPTIMIZATION OF QPSO ALGORITHM IN BEAMFORMING
Ye Tian¹,²,³*, Jiaqi Wang¹,²,³, Longxiang Guo¹,²,³, Jingwei Yin¹,²,³
¹Acoustic science and Technology laboratory, Harbin Engineering University, Harbin 150001, China
²Key Laboratory of Marine Information Acquisition and Security (Harbin Engineering University), Ministry of Industry and Information Technology, Harbin 150001, China
³College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin 150001, China

A3792  RESEARCH ON BEAM SHARPENING TECHNOLOGY OF A CIRCULAR ARRAY DECONVOLVED BEAMFORMING
Xiefan Pan¹,²*, Benqi Liu¹,², Liang Liu², Wenrui Yang², Huaibin Yan², An Fu²
¹Science and Technology on Underwater Acoustic Antagonizing Laboratory, Shanghai, China
²Shanghai Marine Electronic Equipment Research, NO.5200 Jindu Rd, Shanghai, China

A4053  RESEARCH ON CROSS-MEDIUM TARGET DETECTION
Can Wang¹, Jiarong Zhang²*, Longxiang Guo¹
¹Harbin Engineering University, Harbin, China
²Systems Engineering Research Institute, Beijing, China

A4140  SIMULATION OF PHASE CHARACTERISTICS OF UNDERWATER TARGET ACOUSTIC SCATTERING
JinTao Yong¹, YunFei Chen¹, Bing Jia¹, Yang Zhang¹
¹Science and Technology on Underwater Test and Control Laboratory, Dalian, China
A4159 UNDERWATER SIGNAL RECOGNITION USING A CONVOLUTIONAL NEURAL NETWORK
Yan Wang1,2, Hao Zhang1*, Yaohui Lyu1, Xiao Cheng1, Conghui Cao3, Yiheng Jin4
1Department of Electrical Engineering, Ocean University of China, No. 238 Songling Road, Qingdao, China
2School of Physics and Electronic Engineering, Taishan University, No. 525 Dongyue Street, Taian, China
3Department of Physics and Information Engineering, Jianghan University, No. 8 Xuefu Road, Wuhai, China
4School of science and information science, Qingdao agricultural university, No. 700 Changcheng Road, Qingdao, China

A4195 ADAPTIVE JOINT CHANNEL ESTIMATION OF DIGITAL SELF-INTERFERENCE CANCELATION IN CO-TIME CO-FREQUENCY FULL-DUPLEX UNDERWATER ACOUSTIC COMMUNICATION
Zuo S Liu1, Qiong J Zhou2*, Wei S Gan3, Gang Qiao4, Muhammad Bilal5
1College of Underwater Acoustic Engineering, Harbin, China
2Harbin Engineering University, Nangang District Nantong street number 145, Harbin, China

A4232 TRACK BEFORE DETECT FOR LOW FREQUENCY ACTIVE TOWED ARRAY SONAR
Jun Wang1, Junsheng Jiao1
1Science and Technology on Sonar Laboratory, Hangzhou Applied Acoustics Research Institute Hangzhou, China

A4244 NOVEL CRITERION OF PILOT OPTIMIZATION IN UNDERWATER ACOUSTIC OFDM SYSTEMS BASED ON COMPRESSED SENSING
Yanan Yu, Rongkun Jiang, Wei Gao, Yue Hao, Fang Xie
School of Information and Electronics, Beijing Institute of Technology

A4344 EXPERIMENTAL DEMONSTRATION OF UNDERWATER ACOUSTIC COMMUNICATION OVER DEEP-SEA CHANNEL
Pengyu Du1*, Xiaohui Zhu1, Chao Wang
1Science and Technology on Sonar Laboratory, Hangzhou Applied Acoustic Research Institute, Hangzhou, China

A4357 A TWO-DIMENSIONAL STRATEGY OF ADAPTIVE MODULATION AND CODING FOR UNDERWATER ACOUSTIC COMMUNICATION SYSTEMS
Lihuan Huang1, Lifan Zhang1, Yujie Wang1, Qunfei Zhang1*,
1Northwestern Polytechnical University, Xi’an, China
A4387  A-KNN: AN ADAPTIVE METHOD FOR CONSTRUCTING HIGH-RESOLUTION OCEAN MODELS
Jun Liu¹,², Yu Gou¹, Tong Zhang¹, Xinyi Jiang³, XinQi Du¹, XuanZhang¹
¹College of Computer Science and Technology, Jilin University, Changchun, China
²Acoustics Science and Technology Laboratory, Harbin Engineering University, Harbin, China
³School of Statistics and Management, Shanghai University of Finance and Economics, Shanghai, China

A4388  CONVOLUTIONAL LSTM NETWORKS FOR SEAWATER TEMPERATURE PREDICTION
Jun Liu¹,², Tong Zhang¹, Yu Gou¹, XiaoYu Wang¹, Bo Li¹, Wenxue Guan¹
¹College of Computer Science and Technology, Jilin University, Changchun, China
²Acoustics Science and Technology Laboratory, Harbin Engineering University, Harbin, China

A4393  MODULATION RECOGNITION OF UNDERWATER ACOUSTIC COMMUNICATION SIGNALS BASED ON JOINT FEATURE EXTRACTION
Yizhou Ge¹,², Xin Zhang¹,², Qing Zhou¹,²
¹Science and Technology on Communication Information Security Control Laboratory, Jiaxing 314000, China
²No.36 Research Institute of CETC, Jiaxing 314000, China
³School of Marine Science and Technology, Northwestern Polytechnical University, Xi’an 710072, China

A4417  AN UNDERWATER ACOUSTIC FREQUENCY ESTIMATION ALGORITHM BASED ON FIRST-ORDER NEWTON ITERATIONS
Qi Yan, Huakun Jiao, Ting Huo*, Xinjie Wang, Xiaowei Wang
School of Information and Control, Qingdao University of Technology, Qingdao, China

A4423  SUBMARINE TARGET SONAR IMAGE SEGMENTATION BASED ON FCM CLUSTERING WITH THREE-DIMENSIONAL GRAY FEATURES
Zhou Jia Li¹, Guo Hai Tao¹,², Luo Rui Ying¹, Sun Lin Na¹
¹College of Electronic Information Engineering Inner Mongolia University Huhehaote, China
²School of Marine Information Engineering Hainan Tropical Ocean University Sanya, China
MODULATION PATTERN RECOGNITION OF NON-COOPERATIVE UNDERWATER ACOUSTIC COMMUNICATION SIGNALS BASED ON LSTM NETWORK
Xuesong Yu1,2,3, Li Li1,2,3*, Jingwei Yin1,2,3, Mengqi Shao1,2,3, Xiao Han1,2,3
1Acoustic science and Technology laboratory (Harbin Engineering University), Harbin, China
2Key Laboratory of Marine Information Acquisition and Security (Harbin Engineering University) Ministry of Industry and Information Technology, Harbin, China
3College of Underwater Acoustic Engineering (Harbin Engineering University), Harbin, China

SIDE-SCAN SONAR IMAGE ROUGH RECOGNITION AND FEATURE MATCHING BASED ON CNN AND SIFT
Chaoping Dong1,2,3, Longxiang Guo1,2,3*, Keming Hu4, Jingwei Yin1,2,3, Xueli Sheng1,2,3
1Acoustic Science and Technology Laboratory, Harbin Engineering University, Harbin, China
2Key Laboratory of Marine Information Acquisition and Security (Harbin Engineering University), Ministry of Industry and Information Technology, Harbin, China
3College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin, China
4First Training Base, Naval Aviation University, Jiyuan, China

REAL-TIME AMPLITUDE CORRECTION METHOD OF UNDERWATER MEASURED SIGNAL BASED ON FIR FILTER
Cong Huang1, Weifeng Zhu1, Di Li2
1China Ship Development and Design Center, Wuhan, China
2Wuchuan Shipbuilding Industry, Co.,Ltd, Wuhan, China

RESEARCH AND SIMULATION OF EXTENDED HELIX SEARCH METHOD FOR ANTI-SUBMARINE HELICOPTER
Ju Jianbo1, Li Peizong1, Yu Hongbo1, Yang Shaowei1
1Naval aeronautical university, Yantai, China

BASED ON DIFFERENT BUOY ARRAY UNDER THE SUBMARINE EVASIVE TIME
Ju Jianbo1, Yu Hongbo1, Yu Hongbo2
1The Navy Aviation University, YanTai, China
2The Navy Aviation University, 188 Er Ma Dao, YanTai, China
A4698 STUDY OF ACOUSTIC TOMOGRAPHY TO CIRCULAR SYNTHETIC APERTURE SONAR IMAGING
Zeng Sai1,2*, Fan Wei1,2, Du Xuanmin1,2, Zhang Deze1,2
1National key Laboratory of Science and Technology on Underwater Acoustic Antagonizing, Shanghai, China
2Shanghai Marine Electronic Equipment Research Institute, Jindu Road 5200, Shanghai, China

A4743 ANALYSIS OF VOCAL CHARACTERISTICS OF RISSO'S DOLPHINS BASED ON SPEECH SIGNAL PROCESSING
Xu Gaofeng1, Yang Fengmao1, Jin Bo1
1Underwater Network dept. CETC Ocean Technology Ltd BeiJing, China

A4797 LONG DISTANCE COMMUNICATION TECHNOLOGY OF DEEP SEA ACOUSTIC RELEASE TRANSPONDER
Yang Shi1,2*, Lin Guo1,2, Shuxiang Wang2
1College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin, China
2Shanghai Acoustics Laboratory, Chinese Academy of Sciences, 399 Xinlai Road, Shanghai, China

A4799 DESIGN OF INERTIAL/ACOUSTIC INTEGRATED NAVIGATION SYSTEM OF UNDERWATER VEHICLE
Lin Guo1,2*, Yang Shi1,2, Shuxiang Wang2
1College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin, China
2Shanghai Acoustics Laboratory, Chinese Academy of Sciences, 399 Xinlai Road, Shanghai, China

A4809 A LOW-PAPR UNDERWATER ACOUSTIC MULTIUSER COMMUNICATION ALGORITHM BASED ON SELECTIVE DIFFERENTIAL CODING AND SC-FDMA
Xiaowei Wang*, Zequn Li, Hanxue Ding, Huakun Jiao, Qi Yan
School of Information and Control, Qingdao University of Technology, Qingdao, China

A4875 ULTRASONIC INSPECTION OF PREFABRICATED CONSTRUCTIONS USING REVERSE TIME MIGRATION IMAGING METHOD
Yuan Qi1, Zhijie Chen1, Hai Liu1, Yuliang Qi2, Huawei Tong1, Jiangang Xie3
1School of Civil Engineering, Guangzhou University, GuangZhou 510006, China
2Guangzhou Institute of Building Industry Co., LTD, GuangZhou 510006, China
3School of Artificial Intelligence, The Open University of Guangdong, Guangzhou 510091, China
A4980 THE RESEARCH ON ACOUSTIC COMMUNICATION ANTIDOPPLER SHIFT TECHNOLOGY BASED ON FRFFT
Linfeng-Chai\textsuperscript{1,2}, Yongfeng-Zhang\textsuperscript{1,2}, Zhizheng-Zhang\textsuperscript{1,2}
\textsuperscript{1}The 27th Research Institute of China Electronics Technology Group Corporation, Zhengzhou, China
\textsuperscript{2}Zhengzhou key Laboratory of underwater Information system Technology, Zhengzhou, China

A11007 SIGNAL CORRECTION IN UAV SWARM ACOUSTIC COMMUNICATION
Shangbin Zhang\textsuperscript{1*}, Yanjie Zhao\textsuperscript{1}, Shuang Wu\textsuperscript{1}, Guangxun Du\textsuperscript{1}, Deming Zhao\textsuperscript{1}
\textsuperscript{1}China Academic of Electronics and Information Technology, Beijing, China

A41076 MIMO-SC-FDE COMMUNICATION WITH PARTIAL FFT DEMODULATION OVER UNDERWATER ACOUSTIC CHANNELS
Xiao Zhang\textsuperscript{1}, Wei Ge\textsuperscript{2,3,4}, Xiao Han\textsuperscript{2,3,4}, Jingwei Yin\textsuperscript{2,3,4}
\textsuperscript{1}College of Computer Science and Technology, JiLin University, Chang Chun, China
\textsuperscript{2}Acoustic science and Technology laboratory, Harbin Engineering University, Harbin, China
\textsuperscript{3}Laboratory of Marine Information Acquisition and Security (Harbin Engineering University), Ministry of Industry and Information Technology, Harbin, China
\textsuperscript{4}College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin, China

Poster Session 3: Image, Video, and Multimedia Processing

Time: 15:30 - 16:30, December 12, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Prof. Chenwei Deng, Beijing Institute of Technology, China

B1127 AN EVENT CODING METHOD BASED ON FRAME IMAGES WITH DYNAMIC VISION SENSOR MODELING
Xingpeng Lu\textsuperscript{1,2}, Mingyu Wang\textsuperscript{a}, Yang Cao\textsuperscript{3}, Ruilian Zhao\textsuperscript{1}, Wu Zhou\textsuperscript{1}, Zhaolin Li\textsuperscript{2}
\textsuperscript{1}College of Information Science and Technology, Beijing University of Chemical Technology, Beijing, China
\textsuperscript{2}School of Information Science and Technology, Tsinghua University, Beijing, China
\textsuperscript{a}Beijing Aerospace Chenxin Technology Co., Ltd., Beijing, China

B1324 HYPERSPECTRAL INVERSION FOR SOIL MOISTURE AND TEMPERATURE BASED ON GAUSSIAN PROCESS REGRESSION
Zhen Li\textsuperscript{1}, Baojun Zhao\textsuperscript{1*}, Yibing Tian\textsuperscript{1}, Yun Huang\textsuperscript{1}
\textsuperscript{1}Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China
B1333  ADABOOSTNET: AN EFFICIENT HIERARCHICAL NEURAL NETWORK FOR IMAGE CLASSIFICATION
Shichao Zhou1, Baojun Zhao1, Linbo Tang1, Donglin Jing1, Yu Pan1, Yun Huang1
1School of Information and Electronics, Beijing Institute of Technology, Beijing, China

B1368  ENTIRE CHAINS SIMULATION SYSTEM FOR OPTICAL REMOTE SENSING IMAGING
Mengyuan Zhao1,2, Xiaoshan Ma1, Xin Meng1, Zhen Yang1, Xiaodong Peng1
1Key Laboratory of Electronics and Information Technology for Space System, National Space Science Center, Chinese Academy of Sciences, Beijing, China
2University of Chinese Academy of Sciences, No.19(A) Yuquan Road, Shijingshan District, Beijing, China

B1397  SPACE TARGET SUPER-RESOLUTION BASED ON LOW-COMPLEX CONVOLUTIONAL NETWORKS
Tingting Cui1,2, Linbo Tang1,2, Jinghong Nan1,2, Zhenzhen Li1,2
1Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China
2Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing 100081, China

B1440  A METHOD BASED ON REGIN DIVISION FOR EVALUATING THE LASER DISTURBING PICTURE
Wang Xun1,2, Sun Mingjiao1, Gao Xiangxiang1, Zhou Lian1, Wang Jin Li1, Liu Lu1
1China North Vehicle Reacher, Beijing, China
2Beijing Institute of Technology, Beijing, China

B1561  WEIGHTED ANOMALY DETECTION ALGORITHM BASED ON LOCAL DENSITY
Yibing Tian1, Linbo Tang1, Zhen Li1, Yun Huang1
1Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

B1627  EFFICIENT AND LIGHTWEIGHT TARGET RECOGNITION FOR HIGH RESOLUTION SPACEBORNE SAR IMAGES
Yu Pan1, Linbo Tang1, Donglin Jing1, Wei Tang1, Shichao Zhou1
1Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

B2097  AUTO CENTER FIND DENSITY PEAKS ALGORITHM AND ITS APPLICATION IN FACE IMAGE CLUSTERING
GuiYan Wang1,2, ChangJiang Bu1, YueSheng Luo1
1College of Automation, Harbin Engineering University, Harbin, China
2Department of Basic Research, Harbin Finance University, Harbin, China
B2124  INTERSECTION TRAFFIC FLOW COUNTING BASED ON HYBRID REGRESSION MODEL
Yaohang Sun, Zhen Liu, Zhisong Pan
Faculty of Engineering, University of Sydney, Sydney, Australia
College of Command and Control Engineering, Army Engineering University, Nanjing, China

B2150  AN IMAGE SEGMENTATION METHOD FOR THE BLIND SIDEWALKS RECOGNITION BY USING THE CONVOLUTIONAL NEURAL NETWORK U-NET
Ling Liu, Yiping Wang, Hua Zhao*
College of Physics and Technology, Nanjing Normal University, Nanjing, China

B2218  AN IMAGE REGISTRATION ALGORITHM BASED ON SLOPE AND DISTANCE RATIO CONSTRAINTS
Haibo Huang1, Xiangfei Nie1*, Zegang Ding2, Xiaoling Li1, Yue Zhang1, Liyuan Feng1
1School of Electronic and Information Engineering Chongqing Three Gorges University, Chongqing, China
2School of Information and Electroics Beijing Institute of Technology, Chongqing, Beijing, China

B2272  PART-BASED CONVOLUTIONAL NETWORK FOR VISUAL TRACKING
Yiheng Zhang1, Hui He1, Jiaoyang An1, Bo Ma1*
1School of computer science, Beijing Institute of Technology, Beijing, China

B2391  A LESS CONVOLUTED APPROACH TO 3D POSE ESTIMATION
Uchechukwu J. Okechukwu1*, Yan Luo1, Hao Jin1, Yu Cao2
1Department of Electrical and Computer Engineering, University of Massachusetts, Lowell, USA
2Department of Computer Science, University of Massachusetts, Lowell, USA

B2392  POSE-GUIDED NEURAL NETWORK WITH HYBRID REPRESENTATION FOR PERSON RE-IDENTIFICATION
Yang Cheng1, Hongyu Wang1*, Xiaokai Liu2
1School of Information and Communication Engineering, Dalian University of Technology, Dalian, China
2School of Information Science and Technology, Dalian Maritime University, Dalian, China

B2431  GROUND TARGET AUTOMATIC RECOGNITION AND TRACKING IN COMPLEX BATTLEFIELD ENVIRONMENT
Chen Wu1, Linbo Tang1*, Chenhui Duan1
1Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China
EDGE-GUIDED PANORAMIC VIDEO STITCHING WITH LIMITED OVERLAP
Chaoyu Xie, Xuejin Chen*
CAS Key Laboratory of Technology in Geo-spatial Information Processing and Application System
University of Science and Technology of China, Hefei, China

ANALYSIS AND IMPROVEMENT OF GENERAL METHODS IN INFRARED IMAGE DETAIL ENHANCEMENT
Yitian Li¹, Chengguang Ma¹*, Zhizhe Liu¹, Ziqi Liu²
¹Beijing Institute of Remote Sensing Equipment, 100854, Beijing, China
²Beijing Computational Science Research Centerdept, 100193, Beijing, China

LOGO DETECTION BASED ON CONVOLUTIONAL NEURAL NETWORKS
Chao Lu¹, Dandan Li¹, Dan Zeng¹
¹Shanghai University, Key Laboratory of Specialty Fiber Optics and Optical Access Networks, Shanghai Institute for Advanced Communication and Data Science, Shanghai University, Shanghai, China

SPATIAL-TEMPORAL SEGMENTATION-BASED TRACKING
Yuqi Han¹, Zhongyang Xiao², Linbo Tang¹*
¹Beijing Key Laboratory of Embedded Real-time Information Processing, Beijing, China
²State Key Laboratory of Automotive Safety and Energy, Beijing, China

IMPROVING SEMANTIC SEGMENTATION VIA LABEL PROPAGATION AND TEMPORAL CONSISTENCY
Feiyu Qin, Lumeng Cao, Xuejin Chen*
CAS Key Laboratory of Technology in Geo-spatial Information Processing and Application System
University of Science and Technology of China, Hefei, China

VISUAL TRACKING VIA LOCALITY-CONSTRAINED AFFINE SUBSPACE CODING
Yuping Zhang¹*, Jiaoyang An¹, Bo Ma¹
¹School of Computer Science and Technology, Beijing Institute of Technology, Beijing, China

MOVING TARGET DETECTION BASED ON CIRCULAR VIDEO SAR
Hongshuo Wang¹, Baojun Zhao¹*, Xingsha Yang¹
¹Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

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B2626 A REAL-TIME VISUAL UAV DETECTION ALGORITHM ON JETSON TX2
Zipeng Zhang¹, Linbo Tang¹*, Yibing Tian¹, Yu Pan¹
¹Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

B2641 BINARY SEPARABLE CONVOLUTIONAL: AN EFFICIENT FAST IMAGE CLASSIFICATION METHOD
Donglin Jing¹, Linbo Tang¹*, Yu Pan¹, Wei Tang¹, Shichao Zhou¹
¹Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

B2718 VDETOR: AN EFFECTIVE AND EFFICIENT NEURAL NETWORK FOR VEHICLE DETECTION IN AERIAL IMAGE
Zhengquan Piao¹, Baojun Zhao¹, Linbo Tang¹*, Wei Tang¹, Shichao Zhou¹, Donglin Jing¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China

B2734 A METHOD FOR FAST REMOTE SENSING IMAGES CLASSIFICATION
Fengjiao Li¹, Donglin Jing¹, Fukun Bi², Hao Shi¹,³*
¹Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China
²School of Information Science and Technology, Beijing, China
³Beijing Institute of Technology Chongqing Innovation Center, Chongqing, 401120, China

B2794 INTERACTION RECOGNITION USING DEPTH INFORMATION BASED ON 3D CNNS
Jianjun Li¹*, Huiting Liu¹, Chao Zhang¹, Kesai Li¹, Yue Sun¹
¹Inner Mongolia University of Science & Technology, Baotou, China

B2800 AIRCRAFT DETECTION IN REMOTE SENSING IMAGE FOR SPACE-BORNE PLATFORM
Wei Tang¹,², Baozhao Jun¹,², Linbo Tang¹,²*, Yu Pan¹,², Dongling Jin¹,², zhengpiao Quan¹,²
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing, China

B2811 AN EFFICIENT CROWD ESTIMATION METHOD USING CONVOLUTIONAL NEURAL NETWORK WITH THERMAL IMAGES
Muhua Xu
Princeton International School of Math and Science, Princeton, United States
B2820 MULTI-SENSOR IMAGE STITCHING AND FUSION BASED AIR INFRARED TARGET COOPERATIVE DETECTION
Jinghong Nan1,2, Baojun Zhao1,2*, Tingting Cui1,2, Yongfeng Xie3
1Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
2Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing, China
3Beijing Institute of Aerospace Systems Engineering, Beijing, China

B2842 MULTI-SCALE REAL-TIME OBJECT DETECTION WITH DENSELY CONNECTED NETWORK
Dong Jiang, Zhengyao Bai*, Qiong Li
School of Information Science & Engineering, Yunnan University, Kunming, China

B2846 EARLY DETECTION OF FOREST FIRE BASED ON UNMANED AERIAL VEHICLE PLATFORM
Xingsha Yang1, Linbo Tang1*, Hongshuo Wang1, Xinxin He1
1Beijing Key Laboratory of Embedded Real-time Information Processing, Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China

B2859 RESEARCH ON CROP PLANTING AREA CLASSIFICATION FROM REMOTE SENSING IMAGE BASED ON DEEP LEARNING
Yun Huang1, Linbo Tang1*, Donglin Jing1, Zhen Li1, Yibing Tian1, Shichao Zhou1
1Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

B2925 REAL-TIME CHERRY COLOR GRADING BASED ON MACHINE VISION
Yuekun Pei1,2, Mingyue Lian1,2*, Yanchao Jiang1,2, JiaMin Ye1,2, Xinxin Han1,2, Yu Gu1,2
1Dalian University, Dalian, China
2Beidou High Precision Positioning Service Technology Engineering Laboratory of Liaoning Province, Dalian, China

B2932 RESEARCH ON CHERRY SHAPE DETECTION TECHNOLOGY BASED ON MACHINE VISION
Yuekun Pei1,2, Jiamin Ye1,2*, Yanchao Jiang1,2, Mingyue Lian1,2, Xinxin Han1,2, Gu Yu1,2
1Dalian University, Dalian, China
2Beidou High Precision Positioning Service Technology Engineering Laboratory of Liaoning Province, Dalian University, Dalian, China

B2962 DETECTION OF RAILWAY LEAKAGE CABLE JIGS BASED ON SSD
Yunzuo Zhang*, Panliang Yang, Wenxuan Li
School of Information Science and Technology, Shijiazhuang Tiedao University, Shijiazhuang, China
B2963  SHOT BOUNDARY DETECTION BASED ON HSV COLOR MODEL
Yunzuo Zhang*, Wenxuan Li, Panliang Yang
School of Information Science and Technology, Shijiazhuang Tiedao University, Shijiazhuang, China

B2964  RESEARCH ON THE KEY-FRAME EXTRACTION OF SURVEILLANCE VIDEO BASED ON MOTION VELOCITY
Yunzuo Zhang*, Shasha Zhang, Yaning Guo
School of Information Science and Technology, Shijiazhuang Tiedao University, Shijiazhuang, China

B2969  DESIGN AND IMPLEMENTATION OF FACE RECOGNITION SYSTEM BASED ON XILINX ZYNQ-7000
Zheng Wen1, Mengchao Wu1, Yizhuang Xie1*
1School of Information and Electronics, Beijing Institute of Technology, Beijing, China

B2989  SHOT BOUNDARY DETECTION WITH KEY MOTION ESTIMATION AND APPEARANCE DIFFERENTIATION
Zhe Lu1, Lifang Wu1, Meng Jian1*, Shuai Zhang1, Dong Wang1, Xiangdong Wang2
1Department of Informatics Beijing University of Technology, Beijing, China
2Institute of Sports Science General Administration of Sports, Beijing, China

B2991  DISCRETE CLASSIFICATION OPTIMIZATION HASHING FOR IMAGE RETRIEVAL
Feng Li1, Wenjin Hu1, Lifang Wu1, Meng Jian1*, Kuan Zhao1, Yukun Chen1
1Beijing university of technology, Beijing, China

B3235  FAST INFRARED TARGET DETECTION ALGORITHM BASED ON MATHEMATICAL MORPHOLOGY AND OTSU'S METHOD
Ning Wang1, Ming Zhou1, Qinglei Du1, Bing Wang1
1Air Force Early Warning Academy, Wuhan 430019, China
2Second Affiliation name of department and organisation, Address, City, Country

B3355  ROTATION-INVARIANT FAST TEMPLATE MATCHING BASED ON SEQUENTIAL MONTE CARLO
Cuifang Xie1, Min Guo2, Hongfei Feng2, Chen Wong2, Lei Sun1*
1School of Information and Electronics, Beijing, China
2Xi’an Longview Electronic Engineering Co., Ltd, Xi’an, China
B3433 AN IMPROVED DETECTION METHOD FOR MULTI-SCALE AND DENSE PEDESTRIANS BASED ON FASTER R-CNN
Kai Zhu¹, Lintao Li², Dongfang Hu³, Dongxu Chen⁴, Liang Liu⁵
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, P.R. China
²School of Electronic Engineering, Beijing University of Posts and Telecommunications, Beijing, P.R. China
³Beijing Galaxy Information&Communication Co., Ltd., Beijing, P.R. China
⁴China Academic of Electronics and Information Technology, Beijing, P.R. China
⁵China Mobile Research Institute, Beijing, P.R. China

B3706 NO-REFERENCE DEFOCUSED IMAGE QUALITY ASSESSMENT BASED ON HUMAN VISUAL SYSTEM
Han Dong¹, Aodong Shen¹,²*, Youyong Kong¹,², Yu Shen¹, Huazhong Shu¹,²,³
¹School of Computer Science and Engineering, Southeast University, 210096, Sipailou 2, Nanjing, China
²Key Laboratory of Computer Network and Information Display and Visualization, Southeast University, Nanjing, China
³International Joint Laboratory of Information Integration, Southeast University, Nanjing, China

B3805 A REAL-TIME ALGORITHM FOR VISUAL DETECTION OF HIGH-SPEED UNMANNED SURFACE VEHICLE BASED ON DEEP LEARNING
Zhiguo Zhou¹*, Siyu Yu¹, Kaiyuan Liu¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China

B4295 CAMERA ARRAY CALIBRATION USING A SIMPLE CHECKERBOARD PATTERN
Jungang Yang¹, Chao Xiao¹, Pu Wang¹*, Yougan Luo², Chengjin An¹
¹College of Electronic Science and Technology, National University of Defense Technology, Changsha, China
²The Teaching and Research Support Center, National University of Defense Technology, Changsha, China

B4410 A HYBRID METHOD OF CASCADED FEATURES FOR RGB-D SEMANTIC SEGMENTATION
Jichao Jiao*, Cheng Zhang, Libin Yuan, Yaokai Mo, Zhongliang Deng
School of Electronic Engineering, Beijing University of Posts and Telecommunications, Beijing, China

B4589 JOINT STEREO POSITIONING BASED ON SAR/CCD SATELLITE IMAGES INTRODUCING VIRTUAL OBSERVATION WEIGHTS
Li Yingying¹*, Run Yi², Wu Hao¹, Li Zhixin¹, Long En¹, Xin Yu¹, Lian Cuiping¹
¹Beijing Institute of Remote Sensing Information, Beijing, China
²Yunnan Institute of Transportation Planning and Design, Kunming, China
**B5554**  AN OBJECT DETECTION AND CLASSIFICATION METHOD USING RADAR AND CAMERA DATA FUSION  
Fahad A Jibrin, Zhenmiao Deng, Yixiong Zhang*
School of Information Science and Engineering, Xiamen University, Xiamen, China

**B5835**  RESEARCH ON INFRARED AND VISUSIBLE IMAGE FUSION SYSTEM  
Xinxin He¹,², Linbo Tang¹,²*, Chen Wu¹,²  
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China  
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing 100081, China

**B6422**  REAL-TIME REMOTE SENSING VIDEO COMPRESSION FOR ON-ORBIT HETEROGENEOUS PLATFORM  
Chenhui Duan¹,², Linbo Tang¹,²*, Chen Wu¹,², Cheng Li¹,², Chen Li³, Baojun Zhao¹,²  
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China  
²Beijing Key Laboratory of Embedded Real-Time Information Processing Technology, Beijing 100081, China  
³School of Computer Science, North China University of Technology, Beijing 100144, China

**B6510**  IMPROVED SCHEME FOR REVERSIBLE DATA HIDING FOR ENCRYPTED IMAGES USING INTERPOLATION TECHNIQUE  
Yingqiang Qiu¹, Qichao Ying², Kangyu Lv¹, Zhenxing Qian³*, Nianci Tang¹, Xinpeng Zhang³  
¹College of Information Science & Engineering, Huaqiao University, Xiamen, China  
²School of Communication and Information Engineering, Shanghai University, Shanghai, China  
³School of Computer Science, Fudan University, Shanghai, China

**N0243**  AN IMPROVED CURRENT STATISTICAL MODEL WITH MANEUVER DETECTION  
Nengjie Ou*, Shengli Wang, Zhi Zhang, Jianxin Lin  
Nanjing Research Institute of Electronics Technology, Nanjing, China

**N01045**  CONTEXT COMPLEXITY METRIC OF ASSOCIATION PROBLEM FOR TARGET TRACKING  
Bing Liu¹, Yi Wang², Chongying Qi³, Xiaojing Shen¹  
¹Department of Mathematics, Sichuan University, Chengdu, China  
²BIT RACO Electronic, Information Technology Company, Beijing, China
Poster Session 4: Remote Sensing and Signal Processing I

Time: 15:30 - 16:30, December 12, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Prof. Zegang Ding, Beijing Institute of Technology, China

D1470 REMOTE SENSING IMAGE FUSION METHOD BASED ON ADAPTIVE FRACTIONAL DIFFERENTIAL
Xiaoling Li¹, Xiangfei Nie²*, Zegang Ding³, Haibo Huang¹, Yue Zhang¹, Liyuan Feng¹
¹College of Electronics and Information Engineering, Chongqing Three Gorges University, Chongqing, China
²Radar Research Laboratory, Beijing Institute of Technology, Beijing, China

D1854 A REMOTE SENSING IMAGE MATCHING ALGORITHM BASED ON ANISOTROPIC SCALE SPACE
Manjun Yan¹, Zefu Tan¹*, Weiming Tian¹, Aijun Tan¹, Yi Zhang¹
¹Key Laboratory of Information and Signal Processing, Chongqing Three Gorges University, Chongqing, China
²Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China

D2114 NOVEL WAVEFORM DESIGN WITH LOW PROBABILITY OF INTERCEPT AND HIGH DOPPLER TOLERANCE FOR MODERN COGNITIVE RADAR
Xiang Feng¹*, Qun Song², Zhaolin Zhang², Yinan Zhao²
¹Weifang Medical University, No.7166, Baotong West Street, Kuiwen District, Weifang, China
²Harbin Institute of Technology, No.92, Xidazhi Street, Nangang District, Harbin, China

D2121 RESOLUTION ANALYSIS FOR BISTATIC GEO OBJECT ISAR IMAGING
Huatao Shang¹, Tuo Fu¹*, Defeng Chen¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China

D2141 RADAR TRANSMITTER LEAKAGE CANCELLATION
Xingjian Chen¹*, Paul Siqueira¹*
¹Electrical and Computer Engineering, University of Massachusetts, Amherst, MA, USA

D2162 AN AUTOMATIC THRESHOLDING METHOD FOR WATER BODY DETECTION FROM SAR IMAGE
Zhibin Wang¹, Running Zhang¹, Qingjun Zhang¹, Yu Zhu¹, Bang Huang², Zheng Lu¹*
¹Beijing Institute of Spacecraft System Engineering, Beijing, China
²University of Electronic Science and Technology of China, Chengdu, China
D2250  RESEARCH ON SUB-APERTURE IMAGING ALGORITHM OF NEAR-FIELD WIDE BEAM SYNTHETIC APERTURE RADAR
Qingwei Ji†, Wenqiang Shi†
†School of Information and Electronics, Beijing Institute of Technology, Beijing, China

D2273  A HIGH RESOLUTION SF-LFM RADAR SYSTEM BASED ON USRP X310
Wentai Lei†*, Zhaoliang Liu†, Xinyue Jiang†, Ye Zhao†, Tiankun Xu†, Yan Li†, Gengye Liu†, Qingyuan Gu†, Yumei Zhao†, Wenjun Li†
†School of Computer Science and Engineering, Central South University, Changsha, China
‡Beijing Mass Transit Railway Operation Co. LTD, Beijing, China
§Time Varying Transmission Co. LTD, Xiangtan, China
¶Yewuxuan (Beijing) Communication Technology Co. LTD, Beijing, China

D2310  PERFORMANCE ANALYSIS OF THREE-DIMENTIONAL IMAGING USING SINGLE-PASS MULTI-AZIMUTH-ANGLE SAR DATA
Hui Kuang†, Yu Zhu†, Zheng Lu†, Zhibin Wang†, Yufei Huang†
†Beijing Institute of Spacecraft System, Engineering, Beijing, China

D2311  AN IMAGE FORMATION ALGORITHM FOR COOPERATIVE FORWARD LOOKING SAR OF MANNED AERIAL VEHICLE AND UAV WITH ACCELERATION
Ziqiang Meng†*, Xiaoming Li†, Xiaobo Deng†, Xiaodong Han†, Daiyin Zhu†
†AVIC Leihua Electronic Technology Institute, Wuxi, China
‡College of Electronic and Information Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China

D2348  SPACEBORNE BISTATIC INSAR GEOLOCATION WITH GEOSTATIONARY TRANSMITTER
Yuekun Wang†*, Zheng Lu†, Feng Tian†, Zhiyong Suo†, Zhenfang Li†, Yu Zhu†
†Nanjing Research Institute of Electronics Technology, Nanjing, China
‡Beijing Institute of Spacecraft System Engineering, Beijing, China
§National Key Laboratory of Radar Signal Processing, Xidian University, Xi’an, China

D2351  FORMATION DESIGN AND ACCURACY ANALYSIS OF GEO-LEO BISTATIC INSAR SYSTEM
Zheng Lu†, Yuekun Wang†*, Hui Kuang†, Yufei Huang†, Zhibin Wang†, Yu Zhu†
†Beijing Institute of Spacecraft System Engineering, Beijing, China
‡Nanjing Research Institute of Electronics Technology, Nanjing, China
D2413 SAR IMAGING ALGORITHM BASED ON A NEW THREE-DIMENTIONAL ISO-RANGE MODEL FOR HIGH-SQUINT AND WIDE SWATH SAR
Hua Zhong¹, Guangyong Zheng¹, Ronghua Zhao²
¹State Key Laboratory of CEMEE, Luoyang, China
²School of Communication Engineering, Hangzhou Dianzi University, Hangzhou, China

D2450 A THREE-DIMENSIONAL IMAGING METHOD BASED ON PEAK DETECTION FOR MULTI-ANGLE SAR
Zhibin Wang¹*, Running Zhang¹, Bang Huang², Changshan He¹, Hui Kuang¹, Yufei Huang¹
¹Beijing Institute of Spacecraft System Engineering, Beijing, China
²University of Electronic Science and Technology of China, Chengdu, China

D2451 INFLUENCE OF COUPLING SIGNAL ON INTERFEROMETRIC MEASUREMENT OF GROUND-BASED SYNTHETIC APERTURE RADAR
Ying Kong¹, Xu Wang¹, Feifei Lv¹, Ling Jin², Ming Kong¹, Guohua Wei¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Aerospace Dongfanghong Satellite Co. Ltd. Beijing, China

D2453 IDENTIFYING STEALTH AIRCRAFT BASED ON COOPERATIVE DETECTION WITH METRIC-BAND RADAR AND MICROWAVE RADAR
Jianchao Mu¹*, Hongliang Liu, Xuemei Yan
Beijing Institute of Radio Measurement, Beijing, China

D2467 A NOVEL METHOD FOR ABRUPT MOTION CHANGE RADAR TARGET DETECTION BASED ON GENERALIZED RADON-FOURIER TRANSFORM
Siyuan Liu¹, Zegang Ding¹*, Xu Zhou¹, Pengjie You¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

D2480 GAN-BASED MONOCHROMATIC FULL-FOCUS THZ IMAGING
Guoyao Ye¹, Li Ding², Yiming Zhu³*
¹University of Shanghai for Science and Technology, Shanghai, China
²Terahertz Technology Innovation Research Institute, University of Shanghai for Science and Technology, Shanghai, China

D2710 SAR IMAGING ALGORITHM BASED ON HILBERT TRANSFORM IN LONG WAVELENGTH SAR SYSTEM
Jian Wang¹*, Jie Chen¹, Member IEEE, Pengbo Wang¹, Xiangwei Pan¹, Anqi Gao¹
¹School of Electronics and Information Engineering, Beihang University, Beijing, China
D2771  A UNIFIED BACK-PROJECTION CORRECTION ALGORITHM FOR
SQUINT SAR BASED ON SPECAN PROCESSING
Chao Wang, Heng Sun, Xin-Yu Zhang, Ran Zhang
National Key Laboratory of Science and Technology on Test Physics and Numerical
Mathematics, Beijing, P.R. China

D2791  A DIRECT POSITION DETERMINATION METHOD FOR FOUR-STATION
TDOA LOCATION SYSTEM
SUN-RuiQi¹, CHEN-ShunYuan¹, BAI-JinLiang¹, GAO-Lu¹, Li-Hu¹, SUN-Heng¹
¹BEIJING INSTITUTE OF SPACE LONG MARCH VEHICLE National Key
Laboratory of Science and Technology on Test Physics and Numerical Mathematics
Beijing, China

D2813  THE ANALYSES FOR DISCRETIZATION BEHAVIOR OF LINE SEGMENT
TARGET IN SAR IMAGE
Yangkai Wei¹², Tao Zeng¹², Xinliang Chen¹²*, Yujie Fan¹², Yuhan Wen¹²*, Zegang
Ding¹²*
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology,
Beijing, China

D2826  SAR PARAMETER ESTIMATION METHOD FOR RECTANGLE PLANE
BASED ON INFORMATION GEOMETRY
Yuhan Wen¹, Xinliang Chen¹*, Yangkai Wei¹, Yujie Fan¹, Tao Zeng¹, Zegang Ding¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology,
Beijing, China

D2828  THE DISTRIBUTED SAR RECONSTRUCTION METHOD FOR LINE
TARGET
Yujie Fan¹², Xinliang Chen¹²*, Yangkai Wei¹², Yuhan Wen¹², Tao Zeng¹², Zegang
Ding¹²
¹Beijing Key Laboratory of Embedded Real-time Information Processing Technology,
Beijing, China
²School of Information and Electronics, Beijing Institute of Technology, Beijing, China

D2881  FAST DIGITAL BEAMFORMING FOR CONFORMAL ARRAY
Yiling Lu¹, Yin Xiang¹², Yikun Zhao¹, Zegang Ding¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology,
Beijing, China
D2889  CLUTTER CANCELLATION FOR RADAR DETECTING UNMANNED AERIAL VEHICLES BASED ON FPLMS ALGORITHM
Pengcheng Yang1*, Zhiliang Tu1, Xiaole Guo1
1The 38th Research Institute of China Electronics Technology Group Corporation, Hefei, China

D2907  A ROBUST SPACE-TIME CLUTTER CANCELLATION ALGORITHM FOR AIRBORNE PASSIVE RADAR
Pengcheng Yang1*, Zhiliang Tu1, Jianghong Yang1
1The 38th Research Institute of China Electronics Technology Group Corporation, Hefei, China

D3030  WEAK MULTI-TARGETS TRACK-BEFORE-DETECT ALGORITHM BASED ON RECURSIVE HOUGH TRANSFORM
Lin Li*, Guohong Wang, Xiangyu Zhang, Hongbo Yu, Tingting Xin
Institute of Information Fusion, Naval Aviation University, Yantai, China

D3078  REMOTE SENSING OF MARINE AEROSOL WITH AN SNSPDBASED LIDAR
Cheng Wu1,2*, Wenge Xing1, Zhijun Feng1,2, Linghao Xia1,2
1Nanjing Research Institute of Electronics Technology, Nanjing 210039, China
2Key Laboratory of IntelliSense Technology, CETC, Nanjing 210039, China

D3082  ANALYSIS OF SAR TOMOGRAPHY ALGORITHM FOR MULTIPLE APPLICATION REQUIREMENTS*
Yupeng Wang*, Danru Yu, Zhaoyang Li
Institute of Remote Sensing Equipment, Beijing, China

D3107  WIND TURBINE CLUTTER MITIGATION FOR WEATHER RADAR VIA LOW-RANK MATRIX COMPLETION
Xiaodong Wang1, Mingwei Shen1*, Di Wu2, Daiyin Zhu2
1College of Computer and Information Engineering, Hohai University, Nanjing, China
2Key Laboratory of Radar Imagine and Microwave Photonics & Ministry of Education, Nanjing University of Aeronautics and Astronautics, Nanjing, China

D3111  MITIGATION OF WIND TURBINE CLUTTER FOR WEATHER RADARS USING RANGE-DOPPLER DOMAIN JOINT INTERPOLATION IN LOW SNR ENVIRONMENTS
Xu Yao1, Mingwei Shen1,*, Xiaodong Wang1, Di Wu2, Daiyin Zhu2
1College of Computer and Information Engineering, Hohai University, Nanjing, China
2Key Laboratory of Radar Imagine and Microwave Photonics & Ministry of Education, Nanjing University of Aeronautics and Astronautics, Nanjing, China
D3115 RECONSTRUCTION OF THE MISSING HFSWR-BASED SURFACE CURRENT DATA USING DINEOF METHOD
Shen Zhiben1*, Dong Liang1, Peng Xu1, Deng Haihua1, Peng Liang1, Gu Wei1
1Wuhan Second Ship Design and Research Institute, Wuhan, China

Poster Session 5: Artificial Intelligence for Signal Processing

Time: 15: 30 - 16: 30, December 12, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Prof. Yanhua Wang, Beijing Institute of Technology, China

F1108 REAL-TIME OBJECT DETECTION WITH ATTENTION MASK
Haixin Wang1, Xue Bai2, Qiongzhi Wu1
1Beijing Institute of Technology, Beijing, China
2Beijing Institute of Radio Measurement, Beijing, China

F1278 OBJECT RECOGNITION OF THREE-DIMENSIONAL SAR BASED ON POINTNET
Mou Wang1, Shunjun Wei1*, Hao Su1, Qizhe Qu1, Min Yan1, Jun Shi1
1University of Electronic Science and Technology of China, Chengdu, 611731, China

F1296 RADAR TARGET DETECTION USING CONVOLUTIONAL NEURAL NETWORK IN CLUTTER
Yuan Xie1*, Jun Tang1, Li Wang1
1Department of Electronic Engineering, Tsinghua University, Beijing, China

F1330 CONCEALED THREAT DETECTION BASED ON MULTI-VIEW MILLIMETER WAVE IMAGING FOR HUMAN BODY
Yuan Jiang1*, Jing Cui1, Zhenhong Chen1, Xin Wen1
1Science and Technology on Metrology and Calibration Laboratory, Beijing Institute of Radio Metrology and Measurement, Beijing, China

F1555 ANN BASED RELATIONSHIP MODELING OF SUBMARINE SEDIMENTARY SOIL PROPERTIES AND RESISTIVITY*
Lanjun Liu1*, Caiyi Chen1, Li Deng1, Pingping Fan2*, Zhibo Liao1, Zhaowei Chen1
1College of Engineering, Ocean University of China, Qingdao, China
2Institute of Oceanographic Instrumentation, Qilu University of Technology (Shandong Academy of Sciences), Qingdao, China

F1574 SUPERVISED LINEAR DIMENSIONALITY REDUCTION BASED ON FACTOR ANALYSIS AND INFORMATION-THEORETIC CRITERIA
Wei Zhang1, Lan Du1*, Liling Li1
1National Lab of Radar Signal Processing, Xidian University, Xi’an, China
F1634  RESEARCH ON FAULT DIAGNOSIS FOR INERTIAL DEVICES BASED ON VARIATIONAL MODE DECOMPOSITION AND PROBABILISTIC NEURAL NETWORK
Hu Zhou¹*, Ran Duan², Lan Yue¹, Bo Lu¹, Wenjing Chen¹, Qingzhu Liu¹
¹Beijing Aerospace Automatic Control Institute, Beijing, China
²National Key Laboratory of Science and Technology on Aerospace Intelligence Control, Haidian, Beijing, China

F1766  RESEARCH ON ACTIVE JAMMING RECOGNITION IN COMPLEX ELECTROMAGNETIC ENVIRONMENT
Chang Xu¹, Lei Yu¹*, Yinsheng Wei¹, Peng Tong¹
¹Harbin Institute of Technology, Harbin, China

F1810  COMPOSITE LEARNING CONTROL FOR UAVS VIA PRESCRIBED PERFORMANCE
Tao Jiang¹, Defu Lin¹*, Hao Chen²
¹Beijing Key Laboratory of UAV Autonomous Control, Beijing Institute of Technology, Beijing, China
²Key Laboratory of Dynamics and Control of Flight Vehicle within Ministry of Education, Beijing Institute of Technology, Beijing, China

F1824  SHIP AND CORNER REFLECTOR IDENTIFICATION BASED ON EXTREME LEARNING MACHINE
Haodong Yuan¹, Xiongjun Fu¹*, Congxia Zhao¹, Min Xie¹, Xuanyi Gao¹
¹Beijing Institute of Technology, Beijing, China

F1849  RADAR TARGET RECOGNITION OF BALLISTIC MISSILE IN COMPLEX SCENE
Wenbo Tang¹, Lei Yu¹, Yinsheng Wei²*, Peng Tong²*
¹Harbin Institute of Technology, Harbin, China
²Institute of Electrical Engineering Technology, Xidazhi Street, Harbin, China

F1867  FAST RECOGNITION OF PULL-OFF JAMMING USING LSTM
Ying Qin¹, Jing Yang¹, Mengtao Zhu¹, Yunjie Li¹*
¹Beijing Institute of Technology, Beijing, China

F2370  RADAR HIGH RESOLUTION RANGE PROFILE RESTORATION BASED ON CONDITIONAL GENERATIVE ADVERSARIAL NETWORKS
Xuefeng Zhang, Wenying Wang*, Ming Li, Pengfei Shi
Nanjing Research Institute of Electronics Technology, Nanjing, China
F2623  UNSUPERVISED ENVIRONMENTAL SOUND CLASSIFICATION BASED ON TOPOLOGICAL PERSISTENCE
Yueqi Cao1, Shiqiang Zhang1, Fangjia Yan1, Wenyu Li2, Fupeng Sun1, Huafei Sun1*
1School of Mathematics and Statistics, Beijing Institute of Technology, Beijing, China
2School of Computer Science and Technology, Beijing Institute of Technology, Beijing, China

F2636  FUZZY ARTMAP NETWORK AND CLUSTERING FOR STREAMING CLASSIFICATION UNDER EMERGING NEW CLASSES
Yiyang Xu1, Yan Li2*, YunJie Li1
1School of Information and Electronics Beijing Institute of Technology, Beijing, China
2School of Information and Electronics Beijing Institute of Technology, Beijing, China
Peng Cheng Laboratory, Shenzhen, China

F2735  A METHOD BASED ON CLUSTERING TO SUPPRESS DRFM DENSE FALSE TARGETS
Tongan Liu1*, Mei Dong1, Linrang Zhang1, Wanjie Song1
1National Laboratory of Radar Signal Processing, Xidian University, Xi’an 710071, People’s Republic of China

F2843  UNSUPERVISED K-MEANS COMBINED WITH SOFM STRUCTURE ADAPTIVE RADAR SIGNAL SORTING ALGORITHM
Shunqi Su1, Xiongjun Fu1*, Congxia Zhao1, Jingfang Yang1, Min Xie1, Zhifeng Gao1
1Beijing Institute of Technology, Beijing, China

F2985  LEARNING LAPLACIAN MATRIX FOR SMOOTH SIGNALS ON GRAPH*
Tianxing Liao, Wen-Qin Wang*, Bang Huang, Jian Xu
School of Information and Communication Engineering, University of Electronic Science and Technology of China, Chengdu, 611731, China

F3239  FINGERPRINT IDENTIFICATION OF SHORT WAVE TRANSMITTER BASED ON DEEP LEARNING
Cheng Liu1, Bin Chen1*, Shanhu Qu1, Xiaoyang Sui2
1College of Electronic Engineering, Naval University of Engineering, Wuhan, China
2Navy unit 92038, Qingdao, China

F3445  DATA AUGMENTATION USING CONDITIONAL GENERATIVE ADVERSARIAL NETWORK FOR UNDERWATER TARGET RECOGNITION
Chen Li1,2*, Zhaoqiong Huang1,2, Ji Xu1,2, Yonghong Yan1,2,3
1Key laboratory of Speech Acoustics and Content Understanding, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China
2University of Chinese Academy of Sciences, Beijing, China
3Xinjiang Key Laboratory of Minority Speech and Language Information Processing, Xinjiang Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China
RECOGNITION OF THE RADAR ANTENNA SCANNING PERIOD BASED ON CONVOLUTIONAL NEURAL NETWORK
Bin Wang1,2, Hong Wang1, Shunan Wang2, Yifeng Wang1, Dan Zeng1, Min Wang1*
1Shanghai University, Key Laboratory of Specialty Fiber Optics and Optical Access Networks, Shanghai Institute for Advanced Communication and Data Science, Shanghai, China
251st Institute of CETC, Shanghai, China

ZERO-SHOT LEARNING WITH CROSS-LAYER NEURAL NETWORK FOR EMITTER PATTERN RECOGNITION
Zilin Zhang1, Yan Li1,2*, Jinliang Bai3
1Beijing Institute of Technology, Beijing, China
2Peng Cheng Laboratory, Shenzhen, China
3Beijing Institute of Space Long March Vehicle, Beijing, China

SOPC-BASED IMPLEMENTATION OF CONVOLUTIONAL NEURAL NETWORK
Xing Feng1,2, Mingfei Jia1,2, He Chen1,2*
1Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology
2Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing 100081, China

REPRESENTATION LEARNING OF LOGICAL QUERY FOR KNOWLEDGE REASONING
Yashen Wang1*, Huanhuan Zhang1, Yifeng Liu1
1China Academy of Electronics and Information Technology of CETC, Beijing, China

WEIBO AUTHORSHIP IDENTIFICATION BASED ON WASSERSTEIN GENERATIVE ADVERSARIAL NETWORKS
Wanbing Tang1, Chunhua Wu1, Xiaolong Chen1, Yudao Sun1, Chen Li2
1School of Cyberspace Security, Beijing University of Posts and Telecommunications, Beijing, CN
2School of Information, North China University of Technology, Beijing, CN

PVFE: POINT-VOXEL FEATURE ENCODERS FOR 3D OBJECT DETECTION
Jun Xu1, Yanxin Ma2, Songhua He1, Jiahua Zhu2, Yang Xiao3, Jun Zhang4
1College of Information Science and Engineering, Hunan University, Changsha, China
2College of Meteorology and Oceanography, National University of Defense Technology, Changsha, China
3China Aerodynamics Research and Development Center, Mainyang, China
4College of Electronic Science, National University of Defense Technology, Changsha, China
F5386 A COGNITIVE RADAR WAVEFORM OPTIMIZATION APPROACH BASED ON DEEP REINFORCEMENT LEARNING
Qing Wang*, Yanming Qiao, Lirong Gao
School of Electrical and Information Engineering, Tianjin University, Tianjin, 300072, China

F6302 HDSTF: A HYBRID DEEP SPATIO-TEMPORAL FRAMEWORK FOR TRAFFIC PREDICTION*
Wei Li¹, Shiming Xía¹, Feiqiong Chen², Junyang Qiu¹, Xin Liu¹, Zhisong Pan¹*
¹College of Command and Control Engineering, Army Engineering University, Nanjing, China
²College of Field Engineering, Army Engineering University, Nanjing, China

F6815 MICRO-BATCH TRAINING BASED ON RESIDUAL ATTENTION NETWORK FOR ACOUSTIC SCENE CLASSIFICATION WITH MISMATCHED RECORDING DEVICES
Min Ye¹², Hong Zhong¹, Xiao Song², Shilei Huang³, Jian Zhang²*
¹School of Computer Science and Technology, Anhui University, Hefei, China
²PKU Shenzhen Institute, Shenzhen, China
³PKU-HKUST Shenzhen Hong Kong Institution, Shenzhen, China

F11066 BUILDING LAYOUT DETERMINATION BASED ON GENERATIVE ADVERSARIAL NETS IN THROUGH-WALL RADAR IMAGING
Yong Jia¹*, Shengyi Chen¹, Ruiyuan Song¹, Yongheng Zhang¹, Gang Wang¹, Chao Yan¹
¹College of Information Science & Technology, Chengdu University of Technology, Chengdu 610059, China

Poster Session 6: Signal Processing for Big Data

Time: 15:30 - 16:30, December 12, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Dr. Yan Wang, Beijing Institute of Technology, China

G1209 A DIMENSIONAL REDUCTION VISUALIZATION METHOD FOR LARGE DATA OF POWER GRID BASED ON T-SNE ALGORITHMS
Feixiang Gong¹, Yang Shen², Lin Qiao³, Shuo Chen³, Zhuo Chen¹*, Shiming Tian¹
¹Department of Power Consumption and Energy Efficiency, China Electric Power Research Institute Co., Ltd., Beijing, China
²State Grid Liaoqing Electric Power Co., Ltd., Shenyang, China

G3229 DESIGN OF REMOTE SENSING IMAGE SHARING SERVICE SYSTEM BASED ON BLOCK CHAIN TECHNOLOGY
Zhou Xiaoming¹*, Li Caiping¹, Tang Dejin², Song Yuchen¹, Hu Zhen¹, Zhang Jisheng¹
¹Beijing Institute of Remote Sensing Information, Beijing, China
²National Geomatics Center of China Beijing, Beijing, China
G4737  DEEP DISCRIMINATIVE FEATURE LEARNING FOR DOMAIN ADAPTATION
Qiuxia Lin¹, Hefeng Lin¹, Shuang Li*¹
¹Beijing Institute of Technology, Beijing, China

G4825  BALANCED DISCRIMINATIVE TRANSFER FEATURE LEARNING FOR VISUAL DOMAIN ADAPTATION
Limin Su*, Shuang Li
Beijing Institute of Technology Beijing, China

G4988  SITE OPTIMIZATION FOR MULTIFUNCTION RADAR BASED ON BIG DATA
Juan Shen, Zhengxin Song
Beijing institute of radio measurement

G5131  EXTRACTION AND ANALYSIS OF HEAT STORAGE LOAD CHARACTERISTICS FOR POWER QUALITY IMPROVEMENT
Jue Bo¹, Shuo Chen¹, Lin Qiao¹, Sai Liu², Kun Tian³, Haixin Wang³*, Yunlu Li³, Junyou Yang³
¹State Grid Liaoning Electric Power Co. Ltd., Shenyang, China
²NARI Group Corporation (State Grid Electric Power Research Institute), Nanjing, China
³Shenyang University of Technology, Shenyang, China

G5352  RESEARCH ON MODELING OF AIR TARGET MOTION CHARACTERISTICS AND TRACK IDENTIFICATION METHOD
Zewen Wang¹, Hongmin Zhang¹*, Ke Jin²
¹PLA Strategic Support Force Information Engineering University, Zhengzhou, China
²National Digital Switching System Engineering and Technological Research Center, Zhengzhou, China

G5580  ARTIFICIAL NEURAL NETWORK ALGORITHM FOR PREDICT THE PHOTOCATALYTIC ACTIVITY OF THE Mn CO-DOPED MgAl₂O₄: Ce COMPOSITE PHOTOCATALYST
Chaoli Chen¹, Qikai Li¹, Qing Zhang², Yanlan Li², Yong Wei¹, Shifa Wang¹,³*
¹School of Electronic and Information Engineering, Chongqing Three Gorges University, Wanzhou, Chongqing, China
²School of Electronic and Information Engineering, Chongqing Three Gorges University, Wanzhou, Chongqing, China
³Chongqing key laboratory of geological environment monitoring and disaster early-warning in three gorges reservoir area, Chongqing Three Gorges University, Wanzhou, Chongqing, China

G5877  NEURAL NETWORKS FROM A PHYSICAL PERSPECTIVE
Yifan Sun*¹
¹Beijing Key Laboratory of Nanophotonics & Ultrafine Optoelectronic Systems, School of Physics, Beijing Institute of Technology, 100081, Beijing, China
G5893 EFFICIENT REAL-TIME QUERY OF MULTIMEDIA DATA BASED ON 
LOCAL SENSITIVE HASH 
Xiaohan Gao¹*, Yaoyao Wu¹, Yang Gao² 
¹Beijing Institute of Technology, Beijing, China 
²China Information Technology Security Evaluation Center, Beijing, China 

G5895 SWITCHABLE TV-SERIES BROWSING SCHEME USING ALIGNMENT OF 
VIDEO AND EPISODE PLOT DESCRIPTION 
Yaoyao Wu¹*, Songyang Du², Yang Gao³ 
¹Beijing Institute of Technology, Beijing, China 
²Beijing Special Vehicle Research Institute, Beijing, China 
³China Information Technology Security Evaluation Center, Beijing, China 

G7873 MULTI-ANTENNA TUNING SIMULATION PLATFORM BY DEEP 
REINFORCEMENT LEARNING 
Ying Zhao¹, Keqiao Zhang², Rui Han¹* 
¹Department of Computer Science, Beijing institute of technology, Beijing, China 
²College of Electrical and Control Engineering, North China University of Technology, 
Beijing, China 

G7983 DESIGN OF TARGET BEHAVIOR INTELLIGENT ANALYSIS SYSTEM 
BASED ON DISTRIBUTED COMPUTING 
Xinlong Pan¹,²*, Xueqi Cheng², Libo Yao¹, Zhenqiu Zhu¹, Biao Ding¹, Tianjian Tang¹, 
Minbo Li¹, Chuanhui Liu¹ 
¹Institute of Information Fusion, Naval Aviation University, Yantai, China 
²CAS Key Laboratory of Network Data Science & Technology, Institute of Computing 
Technology, Chinese Academy of Sciences, Beijing, China 
³School of Software, Fudan University, Shanghai, China 

N0935 RDBMS BASED HADOOP METADATA AND LOG DATA MANAGEMENT 
OPTIMIZATION 
Haiying Che¹, Octave Iradukunda¹, Khalilov Shahin² 
¹Computer Science and Technology, Beijing Institute of Technology, Beijing, China 
²Computer Science and Technology, Beijing Institute of Technology, Beijing, China
Poster Session 7: Photon / Quantum Signal and Information Processing

Time: 15:30 - 16:30, December 12, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Dr. Xinliang Chen, Beijing Institute of Technology, China

H1538 IDENTIFICATION AND SUPPRESSION OF CLUTTER USING MACHINE LEARNING METHOD
Meiqin Liu1,2, Rui Wang1,2*, Cheng Hu1,2
1Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China
2Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China

H1742 MICROWAVE PHOTONIC FILTER WITH TWO HIGHLY-SELECTIVE AND INDEPENDENTLY-TUNABLE PASSBANDS
Zhen Zeng1, Yuan Ling1, Xuyan Zhang1, Lingjie Zhang1, Zhiyao Zhang2*, Yong Liu1
1State Key Laboratory of Electronic Thin Films and Integrated Devices, School of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu, China

H1758 LOW-POWER RF SIGNAL DETECTION WITH HIGH GAIN USING A TUNABLE OPTOELECTRONIC OSCILLATOR
Xiuyou Han1,2*, Yuchen Shao1, Shuanglin Fu1, Xinxin Su1, Chao Wang2, Yitang Dai3, Yiyi Gu1, Mingshan Zhao1
1School of Optoelectronic Engineering and Instrumentation Science, Dalian University of Technology, Dalian, China
2School of Engineering and Digital Arts, University of Kent Canterbury, U.K
3State Key Laboratory of Information Photonics and Optical Communications, Beijing University of Posts and Telecommunications, Beijing, China

H1784 FULLY POLARIMETRIC RADAR OBSERVING INSECTS FLIGHT
Huafeng Mao1, Rui Wang1*, Cheng Hu1, Jing Yang2
1Key Laboratory of Electronic and Information Technology in Satellite Navigation, Beijing Institute of Technology, Beijing, China
2School of Business Administration, Hunan University, Changsha, China

H1787 APPLICABILITY ANALYSIS OF POLARIZATION CALIBRATION METHODS FOR ENTOMOLOGICAL RADAR
Muyang Li1, Rui Wang1*, Cheng Hu1
1Key Laboratory of Electronic and Information Technology in Satellite Navigation, Beijing Institute of Technology, Beijing, China
RECONFIGURABLE BROADBAND RADIO-FREQUENCY TRANSCEIVER BASED ON OPTICAL COMB GENERATED THROUGH ELECTRO-OPTIC MODULATION AND CYCLIC FOUR-WAVE MIXING EFFECT
Lingjie Zhang¹, Yangxue Ma¹, Zhen Zeng¹, Yaowen Zhang¹, Zhiyao Zhang¹*, Yong Liu¹
¹State Key Laboratory of Electronic Thin Films and Integrated Devices, School of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu, China

ANALYSIS OF WAVEFRONT RECONSTRUCTION IN SURFACE WAVE HOLOGRAPHY
Yu-Hui Chen
School of Physics, Beijing Institute of Technology, Beijing 100081, China

MICROWAVE MAGNETIC FIELD SENSING BASED ON RABI RESONANCE USING RB VAPOR CELL WITH ANTI-RELAXATION COATING
Ning Ru, Xiaochi Liu*, Jifeng Qu
Center for advanced measurement science, National Institute of Metrology, Beijing, China

A MANEUVERING TRACKING METHOD BASED ON LSTM AND CS MODEL
Siwei Li¹, Cheng Hu¹, Rui Wang¹*, Chao Zhou¹, Jing Yang²
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²School of Business Administration, Hunan University, Changsha, China

POLYNOMIAL-TIME SOLUTION FOR THE #P PROBLEM BASED ON CLASSICAL ELECTRONIC CIRCUITS
Jiacheng Bao¹, Zhenwei Yang², Houjun Sun¹, Xiangdong Zhang²*
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²School of Physics, Beijing Institute of Technology, Beijing, China

EXPERIMENTAL OBSERVATION OF TOPOLOGICALLY PROTECTED BOUND STATES IN TWO DIMENSIONAL QUANTUM WALK
Bo Wang, Tian Chen, Xiangdong Zhang
School of Physics, Beijing Institute of Technology, Beijing, China

LOCALLY DISTINGUISH ORTHOGONAL QUANTUM STATES WITH ENTANGLEMENT RESOURCES
Zhi-Chao Zhang
Beijing Key Laboratory of Nanophotonics and Ultrafine Optoelectronic Systems, School of Physics, Beijing Institute of Technology, Beijing, 100081, China
H6966 PERFORMANCE ON THE DISCRETE VARIABLE BASED SATELLITE-TO-GROUND QUANTUM KEY DISTRIBUTION LINKS
Jian Geng, Wen Jin, Xinfeng Yan, and Yongsheng Cheng
Beijing Institute of Space Long March Vehicle, Beijing, China

H11006 SINGLE-SHOT PHOTONIC TIME-STRETCH ANALOG-TO-DIGITAL CONVERTER BASED ON DISSIPATIVE SOLITON
Ting Zou¹, Yaowen Zhang¹, Di Peng², Xuyan Zhang¹, Zhiyao Zhang¹, Yong Liu¹
¹State Key Laboratory of Electronic Thin Films and Integrated Devices, School of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu, China
²Guangdong Provincial Key Laboratory of Micro-nano Manufacturing Technology and Equipment, School of Electromechanical Engineering, Guangdong University of Technology, Guangzhou, China

Poster Session 8: Design and Implementation of Signal Processing Systems
Time: 15: 30 - 16: 30, December 12, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Dr. Yizhuang Xie, Beijing Institute of Technology, China

J1358 DESIGN OF IMAGE TRANSMISSION SYSTEM OF INTRABODY COMMUNICATION BASED ON CAPACITIVE COUPLING
Yongtao Hou, Yong Song*, Maoyuan Li, Xu Zhang, Ning Li, Wangwang Zhu, Yongjia Wang
School of Optics and Photonics, Beijing Institute of Technology, Beijing, China

J1513 IMAGE ENCRYPTION USING ANAMORPHIC FRACTIONAL FOURIER LENS WITH TRANSFORMATION MATERIALS
Xiaobo Yang, Jin Hu*
School of Information and Electronics, Beijing Institute of Technology, Beijing, China

J1924 SIMULATION PLATFORM FOR USV PATH PLANNING BASED ON UNITY3D AND A* ALGORITHM
Zhiguo Zhou¹*, Xu He¹, Lisheng Xu¹, Chong Qu²
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Shanghai Marine Diesel Engine Research Institute, Shanghai, China

J1928 RESEARCH ON VEHICLE LICENSE PLATE LOCATION ALGORITHM BASED ON CONVOLUTIONAL NEURAL NETWORK
Yaqi Li¹*, Yanming Zhao², Junyu Zhou²
¹, ²School of information and communication engineering, Communication University of China Beijing, China
J2452  AN IMPROVED PARALLEL MATCHED FILTER AND SYMBOL SYNCHRONIZATION ALGORITHM BASED ON FREQUENCY DOMAIN TIMING ERROR ESTIMATION
Jian Yan¹, Shili Wang², Dongxu Chen³, Dongfang Hu⁴, Kai Zhu⁵
¹,⁵School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Galaxy Information&Communication Co., Ltd., Beijing, China
³China Academic of Electronics and Information Technology, Beijing, China

J2590  A SPARSE ARRAYS SIDELOBE SUPPRESSION METHOD: CLEAN ALGORITHM FOR JOINT TARGET NUMBER ESTIMATION
Tongtong Zhang¹, Jiyan Huang¹*, Wei Ding¹, Yalong Wang¹
¹University of Electronic Science and Technology of China, Chengdu, China

J2637  MULTIPLE-PRF SET SELECTION BASED ON SKYLINE DIAGRAM
Yuanyuan Huai¹*, Huikai Zang, Xingyu Cai, Jian Gao, Zhirong Shi
Xī'an Electronic Engineering Research Institute, Xī'an, China

J2642  AN FPGA-BASED IMPLEMENTATION OF FOURIER-MELLIN TRANSFORM
Chen Chen¹, Xiujie Qu¹*, Liwen Gao¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China

J2973  WORD LENGTH OPTIMIZATION METHOD FOR RADIX-2²K FIXED-POINT PIPELINE FFT PROCESSORS
Long Pang¹*, Ao Li¹, Yinan Zhou¹, Chen Yang², Yizhuang Xie³, He Chen³
¹School of Information and Communication Engineering, Communication University of China, Beijing, China
²Hisilicon Semiconductor, Huawei Technologies Co., Ltd, Beijing, China
³School of Information and Electronics, Beijing Institute of Technology, Beijing, China

J2994  FPGA VERIFICATION OF RADAR SIGNAL PROCESSING BASED ON SOC
XiaoYing Chen¹, XingHua Wang¹, Ying Liu², ZiCheng Liu³, Jian An⁴
¹School of Information and Electronics Beijing Institute of Technology, Beijing China
²School of Computer Science and Technology, University of Chinese Academy of Sciences, Beijing China
³Beijing BiTMicro Technology Co, Beijing China
⁴Beijing Space Information Relay Transmission Technology Research Center, Beijing China
J3210 CONSTRUCTION OF LARGE SCALE FLEXIBLE LOAD RESOURCE CONTROL SYSTEM
Feixiang Gong\(^1\)*, Xinhua Zhang\(^2\), Lei Ma\(^3\), ShengBo Sun\(^4\), Kai Zhang\(^4\), Songsong Chen\(^1\)
\(^1\)Department of Power Consumption and Energy Efficiency, China Electric Power Research Institute Co., Ltd. Beijing, China
\(^2\)State Grid Co., Ltd., Beijing, China
\(^3\)State Grid Xinjiang Electric Power Co., Ltd., Urumchi, China
\(^4\)State Grid Hebei Electric Power Co., Ltd., Shijiazhuang, China

J3883 THE MICRO-DOPPLER FEATURES EXTRACTION OF EXPERIMENTAL DATA OF CHAFF CLOUD SCATTER DISPERSION BASED ON EMPIRICAL MODE DECOMPOSITION
Ran Li\(^1\), Xinhong Hao\(^1\)*, Song Bai\(^2\), Ping Li\(^1\)
\(^1\)Beijing Institute of Technology, Beijing, China
\(^2\)No.208 Research Institute of China Ordnance Industries, Beijing, China

J3469 MAJORIZATION MINIMIZATION BASED MEMETIC ALGORITHM FOR DESIGNING POLYPHASE SEQUENCES WITH GOOD CORRELATION PROPERTIES
Kaiyue Hou\(^1\), Wei Ren\(^1\), Quanhua Liu\(^1\)*
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J3503 RESEARCH ON THE RADIO FREQUENCY SIMULATION METHOD FOR WIDE-BAND RADAR COMPLEX TARGET BASED ON PHYSICAL OPTICS AND PHYSICAL DIFFRACTION THEORY
DiaoGuijier\(^1\), Ni Hong\(^2\), Zhan Tianming\(^3\), Zhang Yajing\(^4\), Yang Liang\(^2\)
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J3550 DUAL DPT FOR COHERENT ACCUMULATION OF HIGH-SPEED HIGH-MANEUVERING TARGET
Pengfei Shi, Wenying Wang & Yao Wei
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AN IMPROVED RUDP FOR DATA TRANSMISSION IN EMBEDDED REAL-TIME SYSTEM
Yingying CHEN\textsuperscript{1,2}, Shanqing HU\textsuperscript{1,2*}, Xingming LI\textsuperscript{3}, Ce WANG\textsuperscript{1,2}, Zhe CHEN\textsuperscript{4}
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REAL-TIME PROCESSING FOR REMOTE SENSING SATELLITE DATA BASED ON STREAM COMPUTING
Xiaojuan Sun\textsuperscript{1,3}, Bing Li\textsuperscript{2,3,4*}, Tao Shi\textsuperscript{3}, Yunxin Hu\textsuperscript{1,3}, Xiaoyan Yang\textsuperscript{3}, Yao Song\textsuperscript{1,3}
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A PARAMETER OPTIMIZATION ALGORITHM FOR SPACE-BASED FAST SEARCH RADAR
Meijing Jiao\textsuperscript{1}, Lizhong Jiang\textsuperscript{1,2*}, Yan Heng\textsuperscript{1}, Hanxi Zhao\textsuperscript{1}, Jun Wang\textsuperscript{1}, Zhijun Zhang\textsuperscript{1}
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MULTI-CHANNEL RF SIGNAL ACQUISITION SYSTEM DESIGN BASED ON AD9361
Ce WANG\textsuperscript{1,2}, Shanqing HU\textsuperscript{1,2*}, Xingming LI\textsuperscript{3}, Yingying CHEN\textsuperscript{1,2}
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RESEARCH ON OPTIMIZATION OF SUPPRESSION INTERFERENCE CANCELLATION ALGORITHM
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J3899 REALIZATION OF FIXED-POINT SAR IMAGING BASED ON EMBEDDED GPU  
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J3904 THE VERIFICATION SYSTEM OF SLIDING SPOTLIGHT MODE SAR IMAGING BASED ON SOPC  
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J3939 DESIGN OF DISTRIBUTED HETEROGENEOUS GENERAL SIGNAL PROCESSING PLATFORM ARCHITECTURE  
Tianyi Wang1*, Zongfu Xie1, Bo Gao1  
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J3951 REMOTE SENSING IMAGE CLASSIFICATION BASED ON MARKOV RANDOM FIELD  
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J3952 OPTICAL REMOTE SENSING IMAGES FEATURE EXTRACTION OF FOREST REGIONS  
HaiLin Du1*, Yin Zhuang2  
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2School of Electronic Engineering and Computer Science, Peking University, Beijing, China

J3954 PHASE COMPENSATION ALGORITHM OF W-BAND ANTENNA ARRAY BASED ON FRACTIONAL DELAY FIR FILTER  
Xiao Xu1*, Liquan Wang1, Juanfang Chai1, Mengmeng Sheng2, Shan Huang1, Yexin Zhang1  
1Shanghai Electro-Mechanical Engineering Institute, Shanghai, China  
2Beijing Racubit Electronic Information Technology, Beijing, China
J3970  OPTICAL REMOTE SENSING IMAGE WATERS EXTRACTION TECHNOLOGY BASED ON DEEP LEARNING CONTEXT-UNET
Ruoda Yan¹, Shan Dong²
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²Engineering Center of Digital Audio and Video, Communication University of China, Beijing 100024, China

J4207  THE FPGA IMPLEMENTATION OF LOW-ALTITUDE AND SLOW-SPEED SMALL TARGET DETECTION
Tianqu Liu¹, Jinping Sun¹*, Wei Shangguan²
¹School of Electronic and Information Engineering, Beihang University, Beijing, China
²National Laboratory of Radar Signal Processing, Xidian University, Xi’an, China

J4447  A FPGA-BASED IMPLEMENTATION OF V-BLAST MIMO-OFDM COMMUNICATION SYSTEM
Jiang Tao¹, Lei Peng¹, Zhang Yuxi¹, Wang Jun¹*, Yang Bin¹
¹School of Electronic and Information Engineering, Beihang University, Beijing, China

J4461  SYSTEM DESIGN OF A MULTICHANNEL AUTOMATIC TEST AND DATA ACQUISITION SYSTEM FOR DIGITAL PHASED ARRAY ANTENNAS
Ruixuan Yang¹, Meichen Guo¹, Huiqian Du¹, Kun Yu², Qiongzhi Wu¹*
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²Liaoning Planning and Designing Institute of Post and Telecommunication Co. Ltd, Liaoning, China

J4844  A FIR FILTER WITH VARIABLE ORDER BASED ON FPGA
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²Beijing Institute of Radio Metrology and Measurement, Beijing, China
³Beijing Institute of remote sensing equipment, Beijing, China
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J4950  IMPLEMENTATION OF AUTOMATIC FACE DETECTION SYSTEM BASED ON ARM
Keng Li, He Chen*
Beijing Key Laboratory of Embedded Real-Time Information Processing Technology, Beijing Institute of Technology, Beijing, China

J4971  MULTIPLE OBJECT LOCALIZATION AND VITAL SIGN MONITORING USING A MIMO IR-UWB RADAR SYSTEM
Jian Liu¹, Xiaolei Shang¹, Heng Zhu¹, Jian Li¹²
¹Department of EEIS, University of Science and Technology of China, Hefei, Anhui, China
²Department of ECE, University of Florida, Gainesville, Florida 32611, USA
J5978  ALGORITHM IMPLEMENTATION OF ON-BOARD SAR IMAGING ON FPGA+DSP PLATFORM
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2Shanghai Institute of Satellite Engineering, Shanghai 201109, China

J6803  A NOVEL CNN ARCHITECTURE ON FPGA-BASED SOC FOR REMOTE SENSING IMAGE CLASSIFICATION
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3Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing, China
4Beijing Racobit Electronic Information Technology Co., Ltd, Beijing, China

J6918  THREE-LEVEL MEMORY ACCESS ARCHITECTURE FOR FPGA-BASED REAL-TIME REMOTE SENSING IMAGE PROCESSING SYSTEM
Ning Zhang, Xin Wei, Lei Chen, He Chen
1Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology
2Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing 100081, China

J7364  A LIGHTWEIGHT EDGE COMPUTING PLATFORM DESIGNED ON EMBEDED SYSTEM
Qin Lin, Ling Pan, Mingquan Jia, Hongwei Liu, Mingqin Wu, Hao Zhang, Yu Zhong
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J21075  LOW SNR WIDEBAND SIGNAL SYNTHESIS ALGORITHMS FOR MULTIPLE ANTENNAS
Yuedong Luo, Zheng Cai, Yingbin Chen
1China Xi’an Satellite Control Center, Xi’an, China

J31000  A SATELLITE NAVIGATION RELATIVE TIMING METHOD FOR GNSS-R MINIATURIZED PASSIVE LOCATION SYSTEMS
Lei Shi, Zhen Huang, Xuefeng Feng
1School of Aerospace Engineering, Tsinghua University, Beijing, China
2Tsinghua Space Center, Tsinghua University, Beijing, China
J31008  DESIGN AND IMPLEMENTATION OF HIGH PERFORMANCE FFT PROCESSOR WITH RADIX-2^K ALGORITHM
Long Pang¹*, Yamei Huang¹, Chen Wang¹, Chen Yang², Yizhuang Xie³, He Chen³
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J51011  HANDWRITTEN TIBETAN DIGITAL WORDS RECOGNITION BASED ON IMPROVED CONVOLUTIONAL NEURAL NETWORK
Qianjun Shuai¹, Xingwen Wu¹*, Libiao Jin²
¹School of Information and Communication Engineering, Beijing, China
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Poster Session 9: Remote Sensing and Signal Processing II

Time: 15:00 - 16:00, December 13, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Prof. Zegang Ding, Beijing Institute of Technology, China

D3294  MULTI-COMPONENT LFM SIGNAL DETECTION BASED ON DIRFAT ALGORITHM
Langxu Zhao¹*, Haihong Tao¹, Jia Su¹, Weijia Chen¹
¹National Laboratory of Radar Signal Processing, Xidian University, Xi’an, China

D3347  HFSWR IONOSPHERIC CLUTTER SUPPRESSION BASED ON CROSS-CORRELATION OF MULTIPLE AGGREGATION ZONES
Yingning Dong, Boyuan Dong, Weibo Deng*, Xiaochuan Wu, Xin Zhang, Qiang Yang
Key Laboratory of Marine Environmental Monitoring and Information Processing,
Ministry of Industry and Information Technology, China
School of Electronics and Information Engineering, Harbin Institute of Technology,
Harbin, China

D3362  GEO-SAR STARING AND TRACKING IMAGING MODE DESIGNING FOR HURRICANE OBSERVATION
Bingji Zhao¹*, Qingjun Zhang¹, Liping Liu¹, Chao Dai¹, and Jianfeng Yin¹
¹Beijing Institute of Spacecraft System Engineering CAST, Beijing 100094, China
D3458  ACCURACY ANALYSIS OF MULTI-APERTURE ALONG-TRACK INTERFEROMETRIC SAR FOR OCEAN SURFACE CURRENT VECTOR MAPPING
Yan Li1,2, Jinsong Chong2*
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D3624  REMOTE SENSING OF BOTTOM PARAMETERS BASED ON ACOUSTIC BACKSCATTERING CHARACTERISTICS
Shengqi Yu1,2, Baohua Liu1,2*, Kaibei Yu1,2, Zhiguo Yang1,2, Guangming Kan1,2, Xiaobo Zhang1,2
1National Deep Sea Center, Ministry of Natural Resources, Qingdao, China
2Laboratory for Marine Geology and Environment, Pilot National Laboratory for Marine Science and Technology (Qingdao), Qingdao, China

D3628  AN IMPROVED DEEPLAB BASED MODEL FOR EXTRACTING CULTIVATED LAND INFORMATION FROM HIGH DEFINITION REMOTE SENSING IMAGES
Hao Fan1,2, Qingdi Wei1,2, De-qin Shu1*, Ying Li1, Liang Zhang1, Chuan-dong Yang1
1College of Information Science&Engineering Shandong Agricultural University, Tai’an, China
2Shandong Technology and Engineering Center for Digital Agriculture, Tai’an, China

D3648  CHARACTERISTIC ANALYSIS OF THE GREEN-CHANNEL WAVEFORMS WITH ALB MAPPER5000
Shuai Xing*, Dandi Wang, Qing Xu, Yuzhun Lin, Pengcheng Li, Chenbo Liu
PLA Strategic Support Force Information Engineering University, Zhengzhou, China

D3707  A FAST METHOD FOR COMPUTING THE TARGET VISIBILITY TIME THROUGH THE RADAR FENCE
Yang Xu1, Defeng Chen1*, Tuo Fu1
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D3781  ADS-B MESSAGE AUTHENTICATION USING FEATURES OF SIGNAL IN TRANSITION REGIONS
Nan Jiang1, Shutong Qi1, Feixiang Luo1*, Wang Jun1, Wenfeng Wang1
1School of Electronic and Information Engineering of Beihang University, Beijing, China
D3819  A MACHINE LEARNING AIDED METHOD FOR GNSS-R PERMITTIVITY RETRIEVAL VIM ANALYSIS
Yan Jia¹, Yuekun Pei²*, Wenmei Li¹
¹Smart Health Big Data Analysis and Location Services Engineering Lab of Jiangsu Province, Nanjing University of Posts and Telecommunications, Nanjing, China
²Beidou High Precision Positioning Service Technology Engineering Laboratory of Liaoning Province, Dalian University, Dalian, China

D3882  AN INSAR IMAGING METHOD BASED ON TRANSLATIONAL RECONSTRUCTION
Huayu Fan¹, Lixiang Ren²,³*, Jingdong Wang²,³, Erke Mao²,³, Jian Yang¹
¹Department of Electronic Engineering, Tsinghua University, Beijing, China
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D3896  INFORMATION FUSION OF OPTICAL IMAGE AND SAR IMAGE BASED ON DEM
Yue Zhang¹, Xue Yao¹, Shirong Jiang¹, Hong Yang¹, Xiangfei Nie¹*
¹School of Electronic and Information Engineering, Chongqing Three Gorges University, Chongqing, China

D3927  ON THE EVALUATION OF COMPACT POLARIMETRIC SAR FEATURES OVER SEA OIL SLICKS DURING A CONTROLLED OIL-ON-WATER EXERCISE
Yu Li¹, Yuanzhi Zhang², Maurizio Migliaccio³, Ferdinando Nunziata³, Andrea Buono³
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³Dipartimento di Ingegneria, Università degli Studi di Napoli “Parthenope”, Centro Direzionale isola C4, 80143 Napoli, Italy

D3993  AN APPROACH FOR CORRECTION OF IONOSPHERE PHASE CONTAMINATION BASED ON COVARIANCE MATRIX RECONSTRUCTION IN SKYWAVE RADAR SYSTEMS
Xiong Weibo¹*, Wu Xuchen¹, Yang Zhaojun¹
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D4057  A NEW PHASE UNWRAPPING ALGORITHM COMBINING MINIMUM SURFACE-FITTING AND NETWORK FLOW FOR INSAR
Li Che, Liubing Jiang*
School of Computer Science and Information Security, Guilin University of Electronic Technology, Guilin, Guangxi, China
D4064  A NETWORK PRUNING METHOD FOR REMOTE SENSING IMAGE SCENE CLASSIFICATION
Baogui Qi¹, He Chen¹*, Yin Zhuang², Shaorong Liu¹, Liang Chen¹,4
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³ Beijing Institute of Spacecraft System Engineering, Beijing 100094, China
⁴ Beijing Institute of Technology Chongqing Innovation Center, Chongqing 401120, China

D4073  METHOD FOR GENERATING INFRARED BIG DATA FOR DEEP LEARNING ALGORITHM TRAINING BY USING SMALL SAMPLE DATA
Chai Guobei¹, Yang Wenfu¹, Liu Wei¹, Zhao Xuan¹, Yang Jian¹, Zhao Xiaoning¹
¹ China Academy of Launch Vehicle Technology, Beijing, China

D4074  BISTATIC ISAR IMAGING APPROACH FOR MANEUVERING TARGETS WITH SPARSE APERTURE
Yong Wang*, Xuefei Chen, Xin Huang
Research Institute of Electronic Engineering Technology, Harbin Institute of Technology, Heilongjiang, China

D4091  MAINLOBE JAMMING SUPPRESSION WITH FREQUENCY DIVERSE ARRAY RADAR
Jiantao Shi¹,²*, Jun Sun¹,², Yuhao Yang¹,², Ning Wang¹,²
¹ Nanjing Research Institute of Electronics Technology, Nanjing, China
² Key Laboratory of IntelliSense Technology, CETC, Nanjing, China

D4126  A FAST PHASE ERROR CORRECTION METHOD FOR COMPRESS SENSING SAR IMAGING
Jiacheng Ni¹, Qun Zhang¹,², Linghua Su¹, Jingyi Zhang³, Zhiqiang Ma¹
¹ Institute of Information and Navigation, Air Force Engineering University, Xi’an, China
² Collaborative Innovation Center of Information Sensing and Understanding, Xi’an, China
³ Teaching and Research Supporting Centre, Air Force Engineering University, Xi’an, China

D4152  RESEARCH AND IMPLEMENTATION OF SATELLITE IMAGE TARGET RECOGNITION BASED ON DEEP LEARNING
Xiao Jun Wang¹, Bao An Ji¹, Yan Peng Wang¹
¹ College of Information Science and Engineering, Hebei University of Science and Technology, Shijiazhuang, China
D4165 WIDE AREA REMOTE SENSING IMAGE ON ORBIT TARGET EXTRACTION AND IDENTIFICATION METHOD
Zongling Li, Luyuan Wang, Jiyang Yu, Bowen Cheng, Liang Hao, Shuai Jiang
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D4208 AUTOMATIC RECONSTRUCTION OF 3-D BUILDING STRUCTURES FOR TOMOSAR USING NEURAL NETWORKS
Siyan Zhou1,2, Yanlei Li1,2, Fubo Zhang2*, Longyong Chen1,2, Xiangxi Bu1,2
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2National Key Lab of Microwave Imaging Technology, Institute of Electronics, Chinese Academy of Sciences, Beijing, China

D4267 GEOMETRIC CORRECTION OF SPACEBORNE SAR IMAGE BASED ON DEM AND ICESAT DATABASE
Chao Xing1, Yuekun Wang2, Zhibin Wang3, Zhiqiang Liao4, Feng Tian1, Zhiyong Suo1*, Zhenfang Li1
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2Nanjing Research Institute of Electronics Technology, Nanjing, China
3Beijing Institute of Spacecraft System Engineering, Beijing, China
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D4288 A METHOD FOR SHIP DETECTION BASED ON SEA-LAND SEGMENTATION
Shuai Jiang1, Yalong Pang1, Luyuan Wang1*, Jiyang Yu1, Bowen Cheng1, Zongling Li1, Liang Hao1, Cuilian Wang1
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D4312 SPATIAL-TEMPORAL CHANGES OF VEGETATION RESTORATION IN YAN’AN BASED ON MODIS NDVI AND LANDSAT NDVI
Zihui Zhi1, Hao Yin2*, Na Lu2, Xinxin Zhang4, Kun Yu1, Xu Guo1, Hao Qi1
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4Office, Chinese Academy of Geological Sciences, Beijing, China

D4337 RESEARCH ON THE ADJACENCY EFFECT FOR OFF-NADIR OPTICAL REMOTE SENSING*
Xiaoshan Ma*, Zhen Yang, Xiaodong Peng
Key Laboratory of Electronics and Information Technology for Space System, National Space Science Center, Chinese Academy of Sciences, Beijing, China
D4354  AN EFFICIENT ISAR IMAGING METHOD FOR RAPIDLY SPINNING TARGETS
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3School of electronic and information engineering, Chongqing three gorges university, Chongqing, China

D4369  RESEARCH ON YELLOW RIVER ICE SUPERVISED CLASSIFICATION METHOD BASED ON POLARIMETRIC SAR DATA
Pingping Huang1,2, Qiang Shi1,2*, Wei Xu1,2, Weixian Tan1,2
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2Inner Mongolia Key Laboratory of Radar Technology and Application, Hohhot, China

D4396  PASSIVE GNSS-BASED SAR DATA ACQUISITION AND REALTIME PREPROCESSING SYSTEM
Lingzhi Zhang1,2, Feifeng Liu1,2*, Zhanze Wang1,2, Chenghao Wang1,2, Tao Zeng1,2
1Radar Research Lab, School of Information and Eletronics, Beijing Institute of Technology, Beijing, China
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D4402  HIGH-FREQUENCY MONITORING OF INLAND LAKES WATER EXTENT USING TIME-SERIES SENTINEL-1 SAR DATA
Zhu Peng1,2, Huang Shifeng1,2*, Yang Yongmin1,2, Ma Jianwei1,2, Sun Yayong1,2, Gao Siyuan1,2
1China Institute of Water Resources and Hydropower Research, Beijing, China
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D4434  BUILDING AREAS DETECTION FROM OPTICAL REMOTE SENSING IMAGES BASED ON HIERARCHICAL STRUCTURE DESCRIPTION
Wenkai Liu1, Jie Zhang1*, Fukun Bi1, Xiaodi Sun1, Jianhong Han1
1School of Information Science and Technology, North China University of Technology, Beijing, China
D4486 DUAL POLARIMETRIC HRRP SEQUENCE RECOGNITION BASED ON H/α FEATURES
Liang Zhang¹,², Teng Long¹,², Yang Li¹,²,³, Yanhua Wang¹,²,³*
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D4508 SMALL SHIP DETECTION IN SAR IMAGES BASED ON MODIFIED SSD
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D4542 SAR IMAGING REALIZATION WITH FPGA BASED ON VIVADO HLS
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D4584 ZERO-SHOT SUPER RESOLUTION FOR SATELLITE REMOTE SENSING IMAGES
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D4619 DIFFERENT LEVELS MULTI-SOURCE REMOTE SENSING IMAGE FUSION
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D4709 AN ALGORITHM FOR AZIMUTH AMBIGUITIES DETECTION ON HIGH RESOLUTION SAR IMAGES USING SSD
Jian Wang¹*, Jie Chen¹, Member IEEE, Pengbo Wang¹, Zhirong Men¹, Xiangwei Pan¹
¹School of Electronics and Information Engineering, Beihang University, Beijing, China

D4738 HUMAN MOTION RECOGNITION BASED ON RADAR MICRODOPPLER FEATURES USING BAYESIAN NETWORK
Yaotian Zhang, Yao Peng, Jun Wang², Peng Lei
School of Electronic and Information Engineering, Beihang University, Beijing, China
D4775  UNSUPERVISED IMAGE CHANGE DETECTION BASED ON GROUND-BASED IMAGING RADAR
Huifang Ren¹,², Pingping Huang¹,²*, Weixian Tan¹,², Wei Xu¹,², Fang Liu¹,², Mingzhi Zhang³
¹College of Information Engineering, Inner Mongolia University of Technology, Hohhot, China
²Inner Mongolia Key Laboratory of Radar Technology and Application, Hohhot, China
³China Geological Environment Monitoring Institute, Beijing, China

D4814  SMALL TARGETS RECOGNITION IN SAR SHIP IMAGE BASED ON IMPROVED SSD
Yong Li¹, Jing Chen¹, Meng Ke¹*, Linghao Li¹, Zegang Ding¹,², Yan Wang¹,²
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory of Embedded Real-time Information Processing Technology, Beijing Institute of Technology, Beijing, China

D4839  MULTI-ROTORS UAV MOTION RECOGNITION BASED ON MICRO-DOPPLER FEATURE EXTRACTION
Jing Wen¹*, Liang Tu¹, Lei Wang¹, Wang Ren²
¹Information Engineering School, Nanchang Hangkong University, Nanchang, China
²Shanghai Aerospace Electronic Technology, Shanghai, China

D4857  APPLICATION OF KALMAN FILTER IN DEFORMATION DATA PROCESSING OF GROUND-BASED DIFFERENTIAL INTERFEROMETRIC RADAR
Aijun Tan¹, Zefu Tan¹*, Weiming Tian², Manjun Yan¹, Ying Long¹
¹Key Laboratory of Information and Signal Processing, Chongqing Three Gorges University, Chongqing, China
²Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China

D4888  A SAR TARGET RECOGNITION METHOD WITH FREQUENCY AND SPATIAL DOMAIN ENHANCEMENT
Zhiru Wang, Liang Chen¹, Baogui Qi, Guanqun Wang, Hao Shi
Beijing Key Laboratory of Embedded Realtime Information Processing Technology, Beijing Institute of Technology, Beijing, China
D4901  A METHOD OF ACQUIRING VIBRATION MODE OF BRIDGE BASED ON MIMO RADAR
Ao Jiao1,3, Congrong Han1,3, Ruiguo Huo1,3, Weiming Tian1,2,3*, Tao Zeng1,2,3, Xichao Dong1,2,3
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D4995  IMPROVED GENERALIZED LIKELIHOOD RATIO DETECTOR FOR RANGE -SPREAD TARGET
Kuiyu Qu1, Xiaopeng Yang1, Quanhua Liu1, Zhennan Liang1, Guanxu Huang1
1School of Information and Electronics, Beijing Institute of Technology, and Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China
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D5048  ROBUST TRANSMIT BEAMFORMING METHOD FOR INTERFERENCE MITIGATION IN MIMO SCHEME
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D5095  A NEW POLARIMETRIC CALIBRATION METHOD FOR C-BAND SPACEBORNE SAR BASED ON SCATTERING MODEL OF AMAZON RAINFOREST
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D5105  A ROBUST DBF METHOD FOR SPACEBORNE SAR
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D5281  LAND-SEA SEPARATION ALGORITHM BASED ON PHASE CORRELATION FOR MARINE SURVEILLANCE RADAR
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D5292 DATA PROCESSING AND ACCURACY VERIFICATION OF AN AIRBORNE LARGE-FOOTPRINT LASER ALTIMETER
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D5326 PLANE ACCURACY ANALYSIS OF MULTI-SOURCE HIGH RESOLUTION SATELLITE IMAGE
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D5456 PROCESSING OF MILLIMETER WAVE AIRBORNE INTERFEROMETRIC SAR DATA
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³Beijing Institute of Spacecraft System Engineering, Beijing, China
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D5543 AN ADS-B ANTI-COUNTERFEITING SYSTEM BASED ON TDOA
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D5544 FULL-TIME RESOLUTION ANALYSIS AND PATH DETERMINATION FOR AIRBORNE FORWARD-LOOKING SAR WITH OPPORTUNISTIC ILLUMINATOR
Zhanze Wang¹, Feifeng Liu¹*, Lingzhi Zhang¹, Chenghao Wang¹, Tao Zeng¹
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D5869 EXPERIMENT AND RESULTS OF BISTATIC UAV SAR
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D5905 ANALYSIS OF EFFECTS OF FARADAY ROTATION ON GEOSYNCHRONOUS SAR IMAGING
Shiyu Sun¹, Xichao Dong¹,²*, Jiaqi Hu¹, Cheng Hu¹,³
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D41010 CLUTTER MODELING FOR FOD SURVEILLANCE RADAR AT LOW GRAZING ANGLE
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D41098 BALANCED LEARNING-BASED METHOD FOR REMOTE SENSING AIRCRAFT DETECTION
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N0032 METHOD OF AERIAL TARGET LENGTH EXTRACTION BASED ON HIGH RESOLUTION RANGE PROFILE
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N0156 POLARIMETRIC SAR IMAGE SCATTERING CENTER ESTIMATION VIA ATOMIC NORM MINIMIZATION
Ying Xi¹, Yanhua Wang¹,²,³*, Wei Chen¹, Haibo Liu¹,², Yang Li¹,²,³
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N0415 A LANE LINES POST-PROCESSING ALGORITHM: BASED ON FORAGING SEARCH AND CIRCULANT STRUCTURE KERNEL TRACKING
Ding Wei¹, Zou Lin¹,², He Xiang chen², Wan Qun¹, Zhang Tong tong¹, Zhou Long³
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³The Rocket Force University of Engineering, Xi’an, China
N0592  HARQ AND ADAPTIVE TTI BUNDLING FOR LOW EARTH ORBIT SATELLITE VOICE COMMUNICATION  
Siqiang Wang\textsuperscript{1,2}, Ce Sun\textsuperscript{1}, Jingxuan Huang\textsuperscript{1}, Xinyi Wang\textsuperscript{1}  
\textsuperscript{1}School of Information and Electronics, Beijing Institute of Technology, Beijing, China  
\textsuperscript{2}Science and Technology on Communication Networks Laboratory, Shijiazhuang, Hebei Province, China, Beijing, China

N0848  SHIP DETECTION METHOD FOR REMOTE SENSING IMAGES VIA ADVERSARY STRATEGY  
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\textsuperscript{2}Shanghai Academy of Spaceflight Technology, Shanghai, China

Poster Session 10: Sensor Array and Multichannel Signal Processing

E1040  A NEW OUTLIER DETECTION METHOD BASED ON MACHINE LEARNING  
Yafei Lv\textsuperscript{1}, Yaqi Cui\textsuperscript{1}, Xiaohan Zhang\textsuperscript{1}, Mi Cai\textsuperscript{1}, Xiangqi Gu\textsuperscript{1}, Zhenyu Xiong\textsuperscript{1}  
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E1084  PERFORMANCE COMPARISON OF RECONSTRUCTION ALGORITHM BASED ON NON-UNIFORM SAMPLING SYSTEM  
Hanxi Zhao\textsuperscript{1,*}, Hebin Pan\textsuperscript{2}, Jian Shen\textsuperscript{1}, Zhijun Zhang\textsuperscript{1}, Meijing Jiao\textsuperscript{1}, Fen Li\textsuperscript{1}  
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\textsuperscript{2}The Sixth Military Representative Office of the CPLA Naval in Shanghai Address, Shanghai, China

E1085  A NEW BELIEF-BASED CLASSIFICATION FUSION FOR INCOMPLETE DATA  
Zuowei Zhang\textsuperscript{1,*}, Xuxia Zhang\textsuperscript{1}, Zhunga Liu\textsuperscript{1}  
\textsuperscript{1}School of Automation, Northwestern Polytechnical University, Xi’an, China

E1245  THE CIRCULAR ARRAY PASI ALGORITHM BASED ON ARRAY TRANSLATION  
Lei Yang\textsuperscript{1}, Zhangjun Wang\textsuperscript{1}, Xiufen Wang\textsuperscript{1,*}, Jinlong Gong\textsuperscript{1}, Yingying Gai\textsuperscript{1}, Feng Zhang\textsuperscript{1}  
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Provincial Key Laboratory of Marine monitoring instruments and equipment technology, Qingdao, China
**E1332** FREQUENCY DIVERSITY IN LOW-ALTITUDE TARGET DOA ESTIMATION  
Min Jiang, Wenge Xing, Baotao Huang*, Linlin Qi, Guangxin Wu  
Nanjing Research Institute of Electronics Technology, Nanjing, CHINA

**E1338** ECHO DOA BASED HIGH-RESOLUTION TARGET LOCATION  
Ting Yong¹, Chongfa Wang³  
¹The Institute of North Electronic Equipment, Beijing, China  
²National Key Laboratory of Science and Technology on Information System Security, Beijing, China  
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**E1363** AN AZIMUTH HIGH RESOLUTION ALGORITHM BASED ON VIRTUAL ARRAY AND SPATIAL RESAMPLING  
Guijuan Han, Weihua Cong, Bibo Zhu  
National Key Laboratory of Science and Technology on Sonar, Hangzhou Applied Acoustic Research Institute Hangzhou, P. R. China

**E1390** WIDEBAND DOA ESTIMATION UNDER CLUTTER USING MIMO RADAR WITH SPARSE ARRAY  
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¹University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China  
²Lehigh University, Bethlehem, USA

**E1441** DIRECTION OF ARRIVAL ESTIMATION OF WIDEBAND NONCIRCULAR SIGNALS IN FREQUENCY DOMAIN  
Junpeng Zhuang, Yougen Xu⁴, Shuli Shi, Kang Zhao, Yulin Huang, Zhiwen Liu  
School of Information and Electronics, Beijing Institute of Technology, Beijing, China

**E1477** A COMPUTATIONALLY EFFICIENT SCHEME FOR FMCW RADAR DETECTION AND PARAMETER ESTIMATION  
Wanke Liu¹, Jin He¹, Wenxian Yu¹  
¹Shanghai Key Laboratory of Intelligent Sensing and Recognition, Shanghai Jiao Tong University, Shanghai, China

**E1533** RESEARCH ON HIGH RESOLUTION ALGORITHM OF SOUND SOURCE LOCALIZATION BASED ON MICROPHONE ARRAY  
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E1557 ESPRIT-LIKE DIRECTION OF ARRIVAL ESTIMATION ALGORITHM BASED ON GRADIENT DESCENT FOR CO-PRIME LINEAR ARRAY
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2School of Electronics and Communication Engineering, SUN YAT-SEN University, Guangzhou, China

E1587 MUTUAL COUPLING SELF-CALIBRATION FOR PARAMETER ESTIMATION WITH VECTOR ANTENNAS
Yaxing Yue, Yougen Xu*, Junpeng Zhuang, Yulin Huang, Kang Zhao, and Zhiwen Liu
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E1845 DIRECTION FINDING OF WIDEBAND SIGNALS USING IDENTICALLY ORIENTED VECTOR ANTENNAS
Ningning Liu, Yougen Xu*, Yulin Huang, Shuli Shi, Kang Zhao, Zhiwen Liu
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E1922 TWO-DIMENSIONAL ANGLE ESTIMATION FOR SPARSE MIMO ARRAY WITH VELOCITY RECEIVE SENSORS BASED ON REAL-VALUED QUADRILINEAR DECOMPOSITION
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E2054 PERFORMANCE ANALYSIS OF CONFORMAL CONICAL ARRAY FOR AIRBORNE RADAR
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E2063 ROBUST BEAMFORMER BASED ON MAGNITUDE RESPONSE CONSTRAINT AND SPARSE CONSTRAINT
Songlin Lei1,2,3,4*, Xiaolan Qiu1,3,4, Chibiao Ding1,2,4, Yueting Zhang1,3,4
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E2076 ROBUST FREQUENCY DIVERSE ARRAY BEAMFORMER VIA RANDOM FREQUENCY OFFSET
Qiang Li, Lei Huang*, Senior Member, IEEE, Bo Zhao, Min Huang, Peichang Zhang
The College of Electronic and Information Engineering, Shenzhen University, Shenzhen, China
E2086  **WIDEBAND PHASE-ONLY TRANSMIT ADAPTIVE DIGITAL BEAMFORMING TECHNOLOGY**
Guan Wang\(^1\), Mingwei Shen\(^1\)*, Xiaodong Wang\(^1\), Di Wu\(^2\), Daiyin Zhu\(^2\)
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E2399  **ROBUST ADAPTIVE BEAMFORMER BASED ON COMPLEX LS-SVR**
Dongqi Luo\(^1\), Binqiang Si\(^2\), Jihong Zhu\(^1\)*
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\(^2\)School of Instrumentation Science and Opto-electronics Engineering, Beijing Information Science and Technology University, Beijing, China

E2571  **ROBUST MINIMUM GEOMETRIC POWER DISTORTIONLESS RESPONSE BEAMFORMING WITH SPARSE CONSTRAINT IN HEAVY-TAILED NOISE OF UNKNOWN STATISTICS**
Xiaoye Wang\(^1\), Zaoheng Yang\(^1\)\(^2\)*, Jianjun Huang\(^1\)
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E2719  **ADAPTIVE BEAMFORMING FOR JAMMING SUPPRESSION IN THE WHOLE RANGE DOMAIN**
Wei Zhang\(^*\), Xuyuan Cao, Xin Yin, Yue Xie
Science and Technology on Electronic Information Control Laboratory, Chengdu, China

E2880  **ENHANCED ROBUST CAPON BEAMFORMING USING EIGENSPACE-LIKE METHOD**
Wei Zhang\(^*\), Yue Xie, Xuyuan Cao and Xin Yin
Science and Technology on Electronic Information Control Laboratory, Chengdu, China

E3178  **IONOSPHERIC DECONTAMINATION BASED ON GENERAL PARAMETERIZED TIME-FREQUENCY ANALYSIS FOR HIGH-FREQUENCY HYBRID SKY-SURFACE WAVE RADAR**
Zhuoqun Wang, Yajun Li, Dongmei Guo, Xiuhua Shi, Yanbin Li, Sheng Shao
Shanghai Radio Equipment Research Institute, Shanghai, China

E3197  **A WAY OF SHADOW ZONE AUTONOMOUS LOCALIZATION OF DEEP SEA BY A SINGLE HYDROPHONE**
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E3226 KNOWLEDGE-AIDED SPACE TIME ADAPTIVE PROCESSING FOR AIRBORNE RADAR IN HETEROGENEOUS ENVIRONMENTS
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E4293 MULTI-CARRIER AGILE PHASED ARRAY RADAR
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E4616 MAXIMUM LIKELIHOOD ANGLE-RANGE ESTIMATION IN FDA-MIMO RADAR
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E4861 A METHOD OF RADAR DATA COMPRESSION BASED ON SCATTERING CENTER EXTRACTION
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E4883 A FAST STATE-SPACE ALGORITHM FOR 3D SCATTERING CENTER EXTRACTION OF RADAR TARGETS
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E4920 RANGE-ANGLE DECOUPLED ESTIMATION BASED ON GROUPED FREQUENCY CODING METHOD IN MONOSTATIC FDA-MIMO RADAR
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E5062 CONTINUOUS MIMO RADAR WAVEFORM OPTIMIZATION
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E5081  A DISTRIBUTED MIMO RADAR ORIENTED BARRAGE JAMMING STRATEGY
Guangyong Zheng1, Siqi Na2, Tianyao Huang2, Lulu Wang3
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E5117  HIGH-PERFORMANCE DETECTION ALGORITHM OF ALAMOUTI-SOQPSK-TG TELEMETRY SYSTEM
Taili Li, Shilian Wang*, Penghui Lai, Chaoyi Zheng, Wei Zhang
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E5147  POWER ALLOCATION STRATEGY FOR MIMO RADAR WHEN COPING WITH A SMART JAMMER
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E5356  A MODIFIED INFORMATION EMBEDDING SCHEME FOR THE INTEGRATED SYSTEM OF RADAR AND COMMUNICATION
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2Science and Technology on Communication Networks Laboratory, Shi jia zhuang, China

E5395  A CLOSED-FORM SOLUTION FOR MOVING TARGET LOCALIZATION IN DISTRIBUTED MIMO RADAR SYSTEMS
Haibo Song, Lingxiao Zhu, Gongjian Wen
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E5408  SIMULTANEOUS LOCATION AND PARAMETER ESTIMATION OF HUMAN VITAL SIGN WITH MIMO-FMCW RADAR
Qianlan Huang1, Dawei Lu1, Jiemin Hu1, Hongqi Fan1, Meirong Liang1, Jun Zhang1
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E5485  JOINT TRANSMIT BEAMFORMING FOR MULTIUSER MIMO COMMUNICATION AND MIMO RADAR
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E5539  SUCCESSIVE CANCELLATION BASED SEMIDEFINITE RELAXATION DETECTION AND DECODING FOR POLAR CODED UPLINK MULTIUSER MASSIVE MIMO SYSTEM*
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E5783  DISCRETE DYNAMIC BAYESIAN NETWORK THREAT ASSESSMENT METHOD BASED ON CLOUD PARAMETER LEARNING
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E5827  TWO-DIMENSIONAL SPARSE ARRAY DESIGN OF THREE-DIMENSIONAL MIMO RADAR IMAGING SYSTEM
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E5841  RESEARCH ON WAVEFORM DESIGN AND IMAGING OF MIMO-SAR
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E5898  DETECTION PERFORMANCE OF MIMO RADAR FOR A REALISTIC STEALTH AIRCRAFT MODEL
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E6101 INISAR IMAGING UNDER SQUINT MODEL FOR IFDS DATA
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E6170 POLARIZATION MONOPULSE FORWARD-LOOKING IMAGING ALGORITHM BASED ON BADS OPTIMIZATION
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E6573 STRONG SCATTERER RECONSTRUCTION BASED ON CHIRP-PULSE MICROWAVE COMPUTED TOMOGRAPHY
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E7125 EFFECT OF POSITION ON THE PERFORMANCE OF FUSION DETECTION FOR MULTISTATIC AIRBORNE RADAR
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E7151 DELAY AND PHASE PREDICTION METHOD FOR DISTRIBUTED COHERENCE-SYNTHESIZING RADAR
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E7252 DISTRIBUTED DETECTION WITH LOCAL LEAST SQUARES QUANTIZATION
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E7314 OBSERVATION CAPABILITY FOR DISTRIBUTED MULTI-SENSOR INFORMATION FUSION
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E7563  ADAPTIVE DETECTION OF RANGE-SPREAD TARGET IN THE PRESENCE OF SIGNAL MISMATCH
Zeyu Wang*, Gang Li
Department of Electronic Engineering, Tsinghua University, Beijing, China

E7714  TRACK-TO-TRACK ASSOCIATION ALGORITHM BASED ON ADAPTIVE CLUSTERING THRESHOLD
Jun Wang¹, Yajun Zeng¹, Shaoming Wei*, Zengshu Huang¹, Wenfeng Wang¹, Zixiang Wei¹
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E7817  TENSOR BASED ANALYSIS DICTIONARY LEARNING FOR COLOR VIDEO DENOISING
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E7876  SYNTHETIC APERTURE RADAR IMAGES TARGET DETECTION AND RECOGNITION WITH MULTISCALE FEATURE EXTRACTION AND FUSION BASED ON CONVOLUTIONAL NEURAL NETWORKS
Jun Wang¹, Yuming Ren¹, Shaoming Wei*
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E7885  DISTRIBUTED RADAR ROBUST LOCATION ERROR CALIBRATION BASED ON INTERPLATFORM RANGING INFORMATION
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E7944  ANTENNA APERTURE RESOURCE MANAGEMENT OF DIGITAL ARRAY RADAR USING A GREY CHANCE CONSTRAINED PROGRAMMING MODEL
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²Leihua Electronic Technology Research Institute, Aviation Industry Corporation of China, Wuxi, China
³College of Economics and Management, Nanjing University of Aeronautics and Astronautics, Nanjing, China
E7965  COHERENT INTEGRATION TECHNIQUE FOR SMALL TARGETS IN PASSIVE RADAR BASED ON LTE SIGNALS
Juan Rong¹,²,³, Feifeng Liu¹,², Quanhua Liu¹,², Teng Long¹,²
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E11012  MODELING AND ANALYSIS ON DISTRIBUTED RADAR TARGET DOA ACCURACY WITH SYSTEMATIC ERRORS
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E1108  MULTI-JAMMING SEPARATION METHOD BASED ON SPATIAL FILTERING FOR ULTRA-LARGE APERTURE DISTRIBUTED ARRAY RADAR
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E11112  SOURCE NUMBER AND DOA ESTIMATION METHOD BASED ON EIGEN-BEAM MUSIC FOR CLOSELY SPACED SIGNALS
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E21102  OPTIMIZATION OF VIRTUAL ARRAY ELEMENT POSITION FOR SPARSE ARRAY BASED ON PARTICLE SWARM ALGORITHM
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E21106 ROBUST ADAPTIVE BEAMFORMING FOR DISTRIBUTED RADAR BASED ON COVARIANCE MATRIX RECONSTRUCTION AND STEERING VECTOR ESTIMATION
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E21107 ROBUST WIDEBAND BEAMFORMING OF PLANAR ARRAY FOR RAPIDLY MOVING INTERFERENCE
Shuai Li, Junqi Xue, Xiaopeng Yang, Zhongwei Yang, Xiaowei Shi
1School of Information and Electronics, Beijing Institute of Technology, and Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China
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E21111 ADAPTIVE BEAMFORMING BASED ON EIGEN-OBlique PROJECTION FOR MAINLOBE INTERFERENCE SUPPRESSION
Sheng Gao, Chengeng Zhang, Xiaopeng Yang, Junqi Xue
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E31103 STEPPED FREQUENCY WAVEFORMS WITH PHASE COMPENSATION FOR SPACE-TIME ADAPTIVE PROCESSING
Baozhi Wang, Yuze Sun, Xiaopeng Yang, Zhongwei Yang
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E31105 STAP BASED ON RANDOM PHASED CODED SIGNAL FOR RANGE AMBIGUITY CLUTTER SUPPRESSION
Weijie Ye, Yuze Sun, Xiaopeng Yang, Baozhi Wang
1School of Information and Electronics, Beijing Institute of Technology, and Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China.
2Department of Electronic Engineering, Tsinghua University, Beijing 100084, China

E51099 THE EFFECT OF AMPLITUDE AND PHASE DISTORTION ON THE QUALITY OF ONE-DIMENSIONAL HIGH RESOLUTION RANGE PROFILE
Xiaoxin Han, Quanhua Liu, Wenyu Yang, Jinpeng Guo, Yuanyuan Song
1Radar Research Lab & Key Laboratory of Electronics and Information Technology in Satellite Navigation Beijing Institute of Technology & Ministry of Education, Beijing, China
E71095  PARALLEL SIMULATION CALCULATION AND VISUALIZATION TECHNOLOGY OF NETWORK RADAR SYSTEM ACTUAL DETECTION POWER IN URBAN BUILDING ENVIRONMENT
Mingxing Li¹, Ruiming Gao¹, Chunxia Li²*, Huarong Wang¹
¹The 15th Research Institute of China Electronics Technology Group Corporation, Beijing, China
²Information Science Academy of China Electronics Technology Group Corporation, Beijing, China

N0037  AN ANALYTICAL INITIAL ORBIT DETERMINATION METHOD USING TWO RADAR POSITION AND RADIAL VELOCITY OBSERVATIONS
Kai Gao¹*, Tuo Fu¹, Daqing Chen², Defeng Chen¹, Huawei Cao¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Taiyuan Satellite Launch Center, Taiyuan, China

N0052  DESIGN AND PERFORMANCE EVALUATION OF MICROWAVE LANDING RADAR USED FOR DEEP SPACE
Ruidong LIU, Shi ZHENG, Yapeng HE, Lanlan ZHOU, Hongxing DANG, Xiaomin TAN
China Academy of Space Technology, Xi’an, China

N0090  DUAL-FREQUENCY CORRELATION BACK PROJECTION ALGORITHM USING THE DUAL-FREQUENCY GRP TO DETECT THE DEFECTS OF TUNNEL STRUCTURE NONDESTRUCTIVELY
Junli Zhai¹, Xiongyao Xie¹*, Biao Zhou¹
¹Key Laboratory of Geotechnical & Underground Engineering of Ministry of Education, Tongji University, Shanghai, China

N0166  RANDOM BODY MOVEMENT CANCELLATION METHOD FOR FMCW RADAR VITAL SIGN DETECTION
Hui Shang, Xiongkui Zhang, Yihao Ma, Zichen Li, Cheng Jin
School of Information and Electronics, Beijing Institute of Technology Beijing, China

N0173  A DOPPLER HISTORY MODULATED JAMMING AGAINST MIMO SAR
Yinbin Zhang¹, Xiaofan Ai¹*, Zhongliang Fan¹, Dahai Dai²
¹The 38th Research Institute of CETC, Heifei, China
²State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information System, National University of Defense Technology, Changsha, China

N0181  NONCONTACT DETECTION OF HEARTBEAT AND RESPIRATORY RATE VIA 77GHZ RADAR BASED ON ADAPTIVE DOUBLE SLIDING-TIME WINDOW ALGORITHM
Zichen Li¹, Xiongkui Zhang¹*, Yihao Ma¹, Hui Shang¹, Cheng Jin¹
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
N0211  RESEARCH ON THE OPTIMIZATION STRATEGY OF PHASED ARRAY RADAR MULTI-AREA SEARCH PERFORMANCE
Yiming Liu\textsuperscript{1*}, Wen Sheng\textsuperscript{1}, Shihua Liu\textsuperscript{1}, Chen Li\textsuperscript{2}
\textsuperscript{1}Department of Air Defense Early Warning Equipment, Air Force Early Warning Academy, Wuhan, P.R. China
\textsuperscript{2}Department of Air Defense Early Warning Command, Air Force Early Warning Academy, Wuhan, P.R. China

N0220  2-D COHERENCE FACTOR ENHANCEMENT OF RADAR IMAGES
Shiyong Li\textsuperscript{1*}, Guoqiang Zhao\textsuperscript{1}, Qiang An\textsuperscript{2}, Houjun Sun\textsuperscript{1}
\textsuperscript{1}Beijing Key Laboratory of Millimeter Wave and Terahertz Technology, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
\textsuperscript{2}Department of Biomedical Engineering, Fourth Military Medical University, Xi’an, China

N0305  PARAMETERS ESTIMATION OF UNRESOLVED TARGETS WITH STEPPED FREQUENCY TRAIN OF LFM PULSES FOR PHASED ARRAY RADAR: RANGE, ANGLE AND VELOCITY*
Shengbin Luo Wang, Zhenhai Xu\textsuperscript{*}, Xinghua Liu, Wei Dong, Guoyu Wang
State Key Laboratory of Complex Electromagnetic Environment Effects, National University of Defence Technology, Changsha, China

N0564  SIMULTANEOUS TRACKING OF MULTIPLE TARGETS USING INTERFEROMETRIC FMCW RADAR
Huaiyuan Liang\textsuperscript{1}, Pengcheng Wang\textsuperscript{2}, Xiangrong Wang\textsuperscript{2*}
\textsuperscript{1}Shenyuan Honors College, Beihang University, Beijing, China
\textsuperscript{2}School of Electronic and Information Engineering, Beihang University, Beijing, China

N0621  MODELING AND EXPERIMENTAL STUDY OF FULL-DUPLEX CHANNEL CHARACTERISTICS FOR PHASED ARRAY SIMULTANEOUS TRANSMISSION AND RECEPTION
Zhang Jie
The 14th Research Institute of CETC, Nanjing, China

N0631  SLOW-TIME MIMO RADAR WAVEFORM GENERATOR WITH EXPERIMENTAL RESULTS
Mingwei Hao\textsuperscript{1}, Fawei Yang\textsuperscript{1*}, Quanhua Liu\textsuperscript{1}
Key Laboratory of Electronic and Information Technology in Satellite Navigation, Ministry of Education, School of Information and Electronics, Beijing Institute of Technology, Beijing, China

N0649  STUDY ON WAVEFORM CHARACTERISTIC FOR SIMULTANEOUS TRANSMIT AND RECEIVE USED IN MULTIFUNCTION PHASED ARRAY
Zhang Jie
The 14th Research Institute of CETC Nanjing, China
N0745  A BLANKET JAMMING CANCELLING ALGORITHM FOR VHF RADAR WITH UNIFORM CIRCULAR ARRAY
Chao Tian*, Yonghua Tian
1Beijing Institute of Radio Measurement, Beijing, China

N0757  ANGULAR GLINT ANALYSIS BASED ON PARAMETRIC MODEL OF TARGET
Xilei Hong1,2, Zhennan Liang1,2, Yuanyuan Song1,2, Shanqing Hu1,2
1Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
2Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China

N0795  RESEARCH ON AN L-BAND POLARIZATION DIVERSITY MONOPOLE ANTENNA
Zhang Mingxi1, Wang Qian2
1School of electronic information engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, 210016, China
2Aviation Key Laboratory of Science and Technology on High Performance Electromagnetic Windows AVIC Research Institute for Special Structures of Aeronautical Composites, Jinan, Shandong, 250023, China

N0996  IMPACT ANALYSIS OF CFAR DETECTION FOR FALSE TARGETS GENERATED BY THE PHASE-SWITCHED SCREEN
Ran Zhang*, Yuan S Chen, Yu X Zhang, Lei Guo, Liang J Bai, Ping L Zhang
National key laboratory of science and technology on test physics and numerical mathematics, Beijing institute of Space Long March Vehicle, Beijing, China

N1019  STUDY ON EXTRAPOLATION TECHNIQUE OF FIREFINDER RADAR BASED ON METEOROLOGICAL CONDITIONS
XIE Kai1, QIN Peng-cheng1, WANG Rui1, ZHU Fu-hong2
1Department of weapons engineering Army Academy of Artillery and Air Defense Hefei, AnHui, China
2Unit 31606 Huzhou, ZheJiang, China
Poster Session 11: Bio-imaging and Biomedical Signal Processing

Time: 15:00 - 16:00, December 13, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Dr. Xichao Dong, Beijing Institute of Technology, China

I1380 LOGARITHMIC TEXTURE ANALYSIS FOR EARLY LUNG CANCER SCREENING ON CONTRAST ENHANCEMENT CT IMAGES
Fangfang Han¹, Haoran Liu¹, Hong Xie²*, Shuo Chen¹, Shouliang Qi¹, Shi Zhou², Wei Qian³*
¹College of Medicine and Biological Information Engineering, Northeastern University, Shenyang, P. R. China
²The Affiliated Hospital of Guizhou Medical University, Guiyang, P. R. China
³Department of Electrical Engineering, University of Texas at El Paso, El Paso, TX, USA

I1598 RESEARCH ON EIT IMAGE RECONSTRUCTION BASED ON IMPROVED GREIT ALGORITHM
Xinying Zheng¹, Ge Kou²*
¹School of Electronic Engineering and Optoelectronic Technology, Nanjing University of Science and Technology, Nanjing, China
²School of Electronic Engineering and Optoelectronic Technology, Nanjing University of Science and Technology, Nanjing, China

I2373 A NOVEL MERGED STRATEGY WITH DEFORMATION FIELD RECONSTRUCTION FOR CONSTRUCTING STATISTICAL SHAPE MODELS
Zhaofeng Chen¹², Tianshuang Qiu¹*, Hongkai Wang¹
¹Faculty of Electronic Information and Electrical Engineering, Dalian University of Technology, Dalian, China
²School of Electronic Engineering, Jiujiang University, Jiujiang, China

I2475 A GLOBALLY ADAPTIVE REGION GROWING METHOD FOR CERVICAL TUMOR SEGMENTATION BASED ON MR IMAGES
Ying Su¹, Weizhong Sun¹, Yanchi Shi², Fangfang Han¹, He Ma¹*, Ying Kang¹
¹Sino-Dutch Biomedical and Information and Engineering School, Shenyang, China
²Department of Radiology of Shengjing Hospital of China Medical University, Shenyang, China

I2601 MEASUREMENT OF OPTIC NERVE SHEATH ON OCULAR ULTRASOUND IMAGE BASED ON SEGMENTATION BY CNN
Maolin Pang¹, Sunao Liu¹, Fanchao Lin¹, Songlin Liu¹, Bei Tian², Wenli Yang², Xuejin Chen¹*
¹University of Science and Technology of China, Hefei, Anhui
²Beijing Tongren Hospital, Beijing, China
I2929  MALARIA DISEASE PREDICTION BASED ON MACHINE LEARNING
Octave Iradukunda 1, Haiying Che*, Josiane Uwineza 1, Jean Yves Bayingana 1, Muhammad S Bin-Imam 1, Ibrahim Niyonzima 1
1 School of Computer Science and Technology, Beijing Institute of Technology, Beijing, China
2 School of Automation, Beijing Institute of Technology, Beijing, China

Poster Session 12: Signal Processing Theory and Methods

Time: 15:00 - 16:00, December 13, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Prof. Wei Li, Beijing Institute of Technology, China

K1137  AN INADVERTENT MODULATION FEATURE EXTRACTION METHOD BASED ON WMUWD AND MF-DFA
Jian Sun*, Hui Ma, Yaqing Du, Guangxun Lu, Haitao Bai
Luoyang Electronic Equipment Test Center of China

K1176  THE INFLUENCE OF PARAMETER SELECTION FOR RENYI PHASE PERMUTATION ENTROPY ON ABNORMAL CHANGE DETECTION
Huan Kang, Xiaofeng Zhang*
School of Physics and Information Technology, Shaanxi Normal University, Xi’an, China

K1381  RADIATION SOURCE IDENTIFICATION BASED ON BOX DIMENSION OF PF AND SIB FUSION
Shuang Ma 1, Yanhua Jin*, Xin Zhou 2
1 School of Aeronautics & Astronautics, University of Electronic Science and Technology of China, Chengdu, China
2 Institute of Softwave, Chinese Academy of Sciences, Beijing, China

K1481  RADAR JAMMING RECOGNITION METHOD BASED ON FUZZY CLUSTERING DECISION TREE
Yuning Wei*, Yong Li 1, Jindong Zhang 1
1 Key Laboratory of Radar Imaging and Microwave Photonics, Ministry of Education, Nanjing University of Aeronautics and Astronautics, Nanjing, China

K1505  CLASSIFICATION OF PEDESTRIAN MOTION BASED ON MICRO-DOPPLER FEATURE WITH LFMCW RADAR
Yinsheng Wei 1, Yun Zhang 1, Zhaoyang Xu 1, Xin Li 2
1 School of Electronic and Information Engineering, Harbin Institute of Technology, China
2 Aviation University of Air Force, China
K1556  A PERFORMANCE ANALYSIS OF NEURAL NETWORK MODELS IN HRRP TARGET RECOGNITION
Zhequan Fu*, Shangsheng Li, Xiangping Li, Bo Dan, Xukun Wang
Naval Aviation University, Yantai, China

K1597  A NOVEL HYBRID CONSENSUS-BASED HIGH-DEGREE CUBATURE INFORMATION FILTER
Jun Liu, Yu Liu*, Kai Dong, Ziran Ding, Qichao Li
Naval Aviation University, Yantai, China

K1762  A MULTI-FEATURE HRRP TARGET RECOGNITION METHOD BASED ON RELIEF ALGORITHM
Kai Liu¹, Wen Xie¹*, Jianping Ou², Hu Weihua², Pan Zhang¹², Guofan Wang¹²
¹School of Physics and Electronics, Central South University, Changsha, China
²Academy of Electronic Sciences, National University of Defence Technology, Changsha, China

K1871  GENERATIVE ADVERSARIAL NETWORKS FOR EXOATMOSPHERIC INFRARED OBJECTS DISCRIMINATION
Dongya Wu¹*, Huanzhang Lu¹, Huamin Tao¹, Bendong Zhao¹, Ming Zhao²
¹Department of Electronic Science National University of Defense Technology, Changsha, China
²Science and Technology on Near-Surface Detection Laboratory, Wuxi, China

K1903  A NOVEL THREAT SENSING ARCHITECTURE FOR HETEROGENEOUS COGNITIVE SENSOR NETWORKS
Yongji REN¹*, Yun ZHANG¹, Zheng ZHOU¹, Xiaofeng XU², Xiaolei LIU³
¹Naval Aviation University, Yantai, China
²Science and Technology on Communication Information Security Control Laboratory, Jiaxing, China
³Yantai Vocational College, Yantai, China

K1931  PROBE MACHINE BASED OPTIMIZATION APPROACH FOR CAPACITATED VEHICLE ROUTING PROBLEM
Md. Azizur Rahman, Jinwen Ma*
Department of Information Science, School of Mathematical Sciences & LMAM, Peking University, Beijing, 100871, P. R. China

K1948  HIGH-PARALLEL HYPERSONSPECTRAL IMAGE DETECTION ALGORITHM BY SHERMAN-MORRISON CALCULATION OF DUAL-WINDOWS
Yuan Li¹, Lu Li¹*, Wei Li²
¹College of Information Science & Technology, Beijing University of Chemical Technology, Beijing, China
²School of Information and Electronics, Beijing Institute of Technology, Beijing, China
K2148  A SECOND ORDER SYCHROSQUEEZING S-TRANSFORM FOR ISAR IMAGING
Mingzhe Zhu¹, Zijiao Tian¹, Lu Zhong¹, Xianda Zhou¹, Bo Zang¹, Rui Xiao¹
¹Xidian University, No.2 Southern Tai Bai Rd., Xi An, Shaanxi, P.R.China, Xian, China, City, Country

K2313  A MULTI-TASK BAYESIAN ALGORITHM FOR ONLINE COMPRESSED SENSING OF STREAMING SIGNALS
Daoguang Dong*, Guosheng Rui, Wenbiao Tian, Ge Liu, Haibo Zhang
Navy Aviation University, Yantai, China

K2409  CONVOLUTION AND CORRELATION THEOREMS FOR THE WINDOWED OFFSET LINEAR CANONICAL TRANSFORM*
Wenbiao Gao¹, Bingzhao Li²
¹School of Mathematics and Statistics, Beijing Institute of Technology, Beijing, China
²Beijing Key Laboratory on MCAACI, Beijing Institute of Technology, Beijing, China

K2547  WIGNER DISTRIBUTION IN LINEAR CANONICAL DOMAINS: PROPERTIES AND DISCRETIZATION
Zhichao Zhang¹*
¹School of Mathematics and Statistics, Nanjing University of Information Science & Technology, No 219, Ningliu Road, Nanjing, China

K2617  DETECTION PERFORMANCE OF PASSIVE BISTATIC RADAR BASED ON NCAF
Zhang Cai-sheng*, Chen Xiao-long, Zhang Hai
Naval Aviation University, Yantai, Shandong, P.R.China

K2721  TOEPLITZ-BASED UNDERWATER ACOUSTIC CHANNEL BLIND DECONVOLUTION
Siyuan Cang¹,²,³, Johan Sward⁴, Xueli Sheng¹,²,³*, Andreas Jakobsson⁴
¹Acoustic Science and Technology Laboratory, Harbin Engineering University, Harbin 150001, China
²Key Laboratory of Marine Information Acquisition and Security(Harbin Engineering University),Ministry of Industry and Information Technology, Harbin 150001, China
³College of Underwater Acoustic Engineering, Harbin Engineering University, Harbin 150001, China
⁴Department of Mathematical Statistics, Lund University, Lund SE-221 00, Sweden

K2868  PSEUDO INDEPENDENT CONDITIONAL APPROXIMATION FOR TRAINING THE MIXTURES OF GAUSSIAN PROCESSES
Jiahui Luo, Jinwen Ma*
Department of Information Science, School of Mathematical Sciences, Peking University, Beijing, China
THE JOINT DETECTOR BASED ON PRIOR KNOWLEDGE FOR MULTIPATH ENVIRONMENT
Chun Cao, Chongyi Fan*, Huagui Du, Zhen Chen, Sixian Chen, Xiaoqing Jiang, Xiaotao Huang
College of Electronic Science and Technology National University of Defence Technology, Changsha, Hunan, China

ERROR LOWER BOUNDS AND SNR THRESHOLD PREDICTION IN TIME DELAY ESTIMATION VIA SPREADING CODES
Suyang Liu1, Chunjie Qiao2, Jun Yang*, Xiye Guo1
1College of Intelligence Science and Technology, National University of Defense Technology, Changsha, China
2Changsha Technology Research Institute of Beidou Industry Safety, Changsha, China

A MULTIPLE DIMENSIONAL PARAMETER ESTIMATION METHOD FOR AIRBORNE ARRAY RADAR
Xiaodong Han*, Ting Shu1, Jin He1, Xiaoming Li2, Wenxian Yu1
1Shanghai Key Laboratory of Intelligent Sensing and Recognition, Shanghai JiaoTong University, Shanghai, China
2A VIC Leihua Electronic Technology Research Institute, Wuxi, China

MOVING HORIZON ESTIMATION FOR NETWORKED SYSTEMS WITH PACKET DROPOUTS COMPENSATION
Shuai Liu*, Guorong Zhao, Chao Gao
Coastal defence academy, Naval Aviation University, Yantai, China

A METHOD TO IMPROVE THE ACCURACY OF ANGLE FOR AUTOMOTIVE RADAR
Siyu Bai1, Chengfa Xu1*
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RADAR SPECIFIC EMITTER IDENTIFICATION USING CARRIER FREQUENCY FEATURE
Yao Qun1*, Chai Heng1, Gao Moyun1
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SENSOR POSITION ERRORS CALIBRATION ALGORITHM OF NEAR-FIELD SOURCE BASED ON FOURTH-ORDER CUMULANT
Mengyu Ni1*, Hui Chen1, Yang Cheng2, Liuliu Ni1, Xiaoge Wang1
1Air Force Early Warning Academy, Wuhan, China
2No.95662 Unit, the PLA, Lasa, China
K3183 A COMPUTATIONALLY EFFICIENT FDOA ESTIMATION METHOD FOR RADAR PULSE TRAIN
Hongzhi Jiang¹, Dexiu Hu¹*, Yongjun Zhao¹, Yongsheng Zhao¹, Zhixin Liu¹, Xiangying Gao¹
¹PLA Strategic Support Force Information Engineering University, Zhengzhou, China

K3192 A IMPROVED HISTOGRAM PROBABILISTIC MULTIPLE HYPOTHESIS TRACKING ALGORITHM FOR MANEUVERING WEAK TARGET
Wei Shangguan¹, Ying Lu², Jinping Sun²*
¹National Laboratory of Radar Signal Processing, Xidian University, Xi’an, China
²School of Electronic and Information Engineering, Behang University, Beijing, China

K3193 MINIMUM ENTROPY BASED VELOCITY COMPENSATION ALGORITHM FOR STRETCHED CHIRP-STEP WAVEFORMS
Mingjing Liu¹*, Jianping Chen²
¹Nanjing Research Institute of Electronic Technology, Nanjing, China
²Nanjing Research Center of ZTE, Nanjing, China

K3225 MODULATION RECOGNITION OF SPACE-TIME BLOCK CODES BASED ON FOURTH-ORDER DELAY MATRIX
Yu Keyuan¹, Zhang Limin²*, Jin Kun¹, Yan Wenjun¹, Liu Zhao³
¹Naval Aeronautical University, Yantai, China
²Naval Aeronautical University, 188 Erma Road, Yantai, China
³92429 army, Qingdao, City, Country

K3236 ANTI-JAMMING EFFECTIVENESS EVALUATION AND SIMULATION OF ANTI-RADIATION UNMANNED AERIAL VEHICLE
LIU Yang¹, DONG Wen-feng¹, LIU Yang²*
¹Information confrontation department, Air Force Early Warning Academy Wuhan China, City, Country
²Information confrontation department, Air Force Early Warning Academy Wuhan China, City, Country

K3241 A NOVEL TARGET CLASSIFICATION AND IDENTIFICATION ALGORITHM FOR 77G LFMCW AUTOMOTIVE COLLISION AVOIDANCE RADAR
Jing Zhang¹*, Weike Shang¹
¹The business department of military trade and civilian radar, The 38 Research Institute of CETC, Hefei, China

K3251 MULTI-TARGET LOCALIZATION WITH MIMO RADAR VIA COUPLED CANONICAL POLYADIC DECOMPOSITION
Geng Chen¹²*, Ze-Feng Zhu¹, Jia-Xing Yang², Xiao-Feng Gong²
¹People’s Liberation Army of China, No. 91913, Dalian, China
²School of Information and Communication Engineering, Dalian University of Technology, Dalian, China
K3328 A NOVEL MULTIPLE HYPOTHESIS TRACKING ALGORITHM INTEGRATED WITH DETECTION PROCESSING
Ziwei Wang¹, Jinping Sun¹*, Naiyu Wang¹
¹School of Electronic and Information Engineering, Beihang University, Beijing, China

K3334 AN ENHANCED SMALL SIGNAL EQUIVALENT CIRCUIT MODEL FOR TRANSMISSION BANDWIDTH FAULT DIAGNOSIS OF VCSEL
Tao Xiang¹, WenHao Chen²*, Li Wang³
¹,²,³ Southwest China Institute Electronic Technology Chengdu, China

K3345 SPECIFIC EMITTER IDENTIFICATION BASED ON INSTANTANEOUS FREQUENCY CHARACTERISTICS
Moyun Gao¹, Heng Chai¹, Jinfeng Wang¹
¹National Laboratory of Marine Electromagnetism, China Shipbuilding Industry Corporation No.723 Institute, Yangzhou, China

K3421 BEAM-WAVEGUIDE-ANTENNA MONOPULSE RADAR AMPLITUDE-PHASE INCONSISTENCY SATELLITE CALIBRATION METHOD
Peiwen Yang¹, Huaiwei Cao¹, Jialiang Han¹, Defeng Chen²*
¹Beijing Institute of Technology, Beijing, China

K3442 MULTI-SENSOR ATTITUDE INFORMATION FUSION BASED ON EKF FOR MICRO-SATELLITE
Fengqi Jiang¹, Xin Song¹*, Zhenguo Yan¹
¹College of Aerospace Science and Engineering, National University of Defense Technology, Changsha, China 410073

K3449 UNIMODULAR PHASE-CODED WAVEFORMS WITH LOW SIDELOBES OVER DESIRED RANGE-DOPPLER REGIONS
Yinghao Sun¹,², Lixiang Ren¹,²*, Kang Zhang³, Erke Mao¹,²
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Key Laboratory of Electronic and Information Technology in Satellite Navigation, Ministry of Education, Beijing, China
³Beijing Institute of Radio Measurement, Beijing, China

K3482 WEAK TARGET INTEGRATION DETECTION BASED ON BISTATIC RADAR SECOND-ORDER KEYSTONE TRANSFORM
Pan Jin¹, Xuan Rao¹, Xiangsheng Zhu¹, Fengqin Kan¹, Pan Jin²*
¹School of Information Engineering, Nanchang Hangkong University, Nanchang, China

K3504 HUMAN TARGET ENHANCEMENT BASED ON RADON FOURIER TRANSFORM IN THROUGH-WALL IMAGING RADAR
Yongfei Huang, Linjie Qian
Communication NCO school Army Engineering University of PLA, Chongqing, China
K3629 THE PROCESSING OF SYNCHRONOUS DOUBLE PULSE LASER INDUCED ACOUSTIC SIGNAL
Liu Tao1*, Zong Siguang1, Zhang Wencheng2
1Naval University of Engineering, Wuhan, China
2Naval Qingdao Base Radar Soar Repair Factory, Qingdao, China

K3639 A CLUTTER SUPPRESSION METHOD FOR DIVERSE PULSE TRAIN WITH DIFFERENT INTRA-PULSE FREQUENCY CODING
Fei Wang1,2, Huaye Fan1,2, Lixiang Ren1,2*, Erke Mao1,2, Jian Yang1,2
1School of Information and Electronics Beijing Institute of Technology Beijing, China
2Key Laboratory of Electronic and Information Technology in Satellite Navigation Beijing, China

K3704 POST COMPENSATION OF WEAK NONLINEARITY FOR DIGITAL RECEIVER
Peng Liang, Peng Xu, Shen Zhiben
Wuhan Second Ship Design and Research Institute, Wuhan, Hubei, P.R. China

K3713 A PHASE ADJUSTMENT METHOD FOR COMPENSATING DOPPLER MIGRATION IN PASSIVE BISTATIC RADAR
Jue Wang, Bo Gao, Yifei Yan, Yingjun Li
Xi’an Research Institute of Navigation Technology, Xi’an, P. R. China

K3722 APPLICATION OF GROUND-BASED DEFORMATION MONITORING RADAR IN MINE SLOPE MONITORING-TAKING A MINE IN INNER MONGOLIA AS AN EXAMPLE
Yaolong Qi1, Mingzhi Zhang2, Lin Qi3,4, Weixian Tan3,4*, Weiping Huang3,4, Wei Xu3,4
1Electronics & Information Engineering, Beihang University, Beijing, China
2China Institute of Geological and Environmental Monitoring, Beijing, China
3Inner Mongolia Key Laboratory of Radar Technology and Application, Hohhot, China
4College of Information Engineering, Inner Mongolia University of Technology, Hohhot, China

K3740 INFORMATION MODEL OF RADAR COMMUNICATION SYSTEM AND OPTIMIZATION OF POWER ALLOCATION
Dan Chen1*, Dazhuan Xu1
1Jiangsu Key Laboratory of Internet of Things and Control Technologies, College of Electronic and Information Engineering, Nanjing University of Aeronautics and Astronautics, 29 Jiangjun Avenue, Jiangning District, Nanjing, People’s Republic of China
K3765  INTERRUPTED SAMPLING REPEATER JAMMING SUPPRESSION METHOD BASED ON HYBRID MODULATED RADAR SIGNAL
Jiaxiang Zhang\textsuperscript{1,2}, Chao Zhou\textsuperscript{1,2}\textsuperscript{*}
\textsuperscript{1}Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China
\textsuperscript{2}Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China

K3776  A TWO-STEP PARAMETER ESTIMATION ALGORITHM FOR MICROWAVE PHOTONIC SPECTRUM AWARENESS
Lu Chen\textsuperscript{1}, Yesheng Gao\textsuperscript{1,2}, Xingzhao Liu\textsuperscript{1}, Zhicheng Wang\textsuperscript{2}
\textsuperscript{1}State Key Laboratory of Advanced Optical Communication System and Networks, Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai, China
\textsuperscript{2}Shanghai Radio Equipment Research Institute, Shanghai, China

K3853  GENERATING FREQUENCY-HOPPING SEQUENCES BY CLIFFORD MAP
Bo Pan, Dong Wang, Bin Wu, Zhi Hu
Engineering College, Air Force Engineering University

K3884  MICRO-MOTION FEATURE EXTRACTION BASED ON PHASE-DERIVED VELOCITY MEASUREMENT FOR HIGH-SPEED TARGETS
Huayu Fan\textsuperscript{1}, Wenji Li\textsuperscript{2,3}, Lixiang Ren\textsuperscript{2,3}, Erke Mao\textsuperscript{2,3}, Jian Yang\textsuperscript{1}
\textsuperscript{1}Department of Electronic Engineering, Tsinghua University, Beijing, China
\textsuperscript{2}Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
\textsuperscript{3}Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China

K3900  A NOVEL PARAMETER ESTIMATION METHOD OF INTERRUPTED SAMPLING REPEATER JAMMING
Yunyun Meng\textsuperscript{1}, Lei Yu\textsuperscript{1,2}, Yinsheng Wei\textsuperscript{1}, Peng Tong\textsuperscript{1}
\textsuperscript{1}School of Electronic and Information Engineering, Harbin Institute of Technology, Harbin, China

K3958  HIGH ACCURACY ACTIVE STAND-OFF TARGET GEOLOCATION USING UAV PLATFORM
Xiwen Yang\textsuperscript{1}, Defu Lin\textsuperscript{1}, Fubiao Zhang\textsuperscript{1}, Tao Song\textsuperscript{1}, Tao Jiang\textsuperscript{1}
\textsuperscript{1}Institute of UAV Autonomous Control, School of Aerospace Engineering, Beijing Institute of Technology, Beijing, China

K3959  DUAL-CHANNEL MONOPULSE ANGLE ESTIMATION METHOD FOR WEAK TARGET BASED ON REFERENCE SIGNAL
Yechen Li, Jie Yao, Qing Shen, Wei Cui
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K3979  DETECTING METHOD FOR RESOLVABLE GROUP-TARGET SEPARATION BASED ON STANDARD DEVIATIONAL ELLIPSE
Guanxu Huang¹, Xiaopeng Yang¹*, Quanhua Liu¹, Zhennan Liang¹, Kuiyu Qu¹
¹School of Information and Electronics, Beijing Institute of Technology, and Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China

K3981  PRELIMINARY EXPLORATION OF DETECTION AND COMMUNICATION UNIFICATION TECHNOLOGY FOR GROUND-BASED RADAR
Zhou Hong, Tian Minghong, Yuan Zhentao, Wan Chao, Song Zhengxin, Xu Yang, Guo Jianming, Yuan Changcheng Nanjing Marine Radar Institute, Nanjing, China

K4103  TARGET DETECTION METHOD FOR QUASI-CONTINUOUS WAVE SYSTEM RADAR
Yu Zhang
Department of information processing, Nanjing Research Institute of Electronics Technology, Nanjing, China

K4142  GRAPH TRAVERSAL APPLIED TO SEARCH FOR OPTIMAL MINIMUM PEAK SIDELOBE LEVEL BINARY SEQUENCES
Yi Yang¹, Wei Ren¹, Yuanyuan Song¹*, Hao Li¹
¹Key Laboratory of Electronic and Information Technology in Satellite Navigation, Beijing Institute of Technology, Ministry of Education, Beijing, China

K4237  THE APPLICATION OF PSEUDO-RANGE SMOOTHING IN TWO WAY TIME TRANSFER BASED ON ADAPTIVE KALMAN FILTERING
Zihuan Hao¹,², Jian Li¹,²*, Tu Xu¹,²
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K4741  OPTIMAL DESIGN OF MTD FILTER BASED ON FIR
Dai Qiaona¹, Tian Yonghua²
¹,²Surveillance Radar General Design Department, Beijing Institute of Radio Measurement, Beijing, China

K5113  THE DENOISE AND RECONSTRUCTION METHOD FOR RADAR HRRP USING ENHANCED SPARSE AUTO-ENCODER
Chen Guo¹, Cong’an Xu¹*, Shun Sun¹, Xiaohan Zhang¹
¹Institute of Information Fusion, Naval Aviation University, Yantai, China
K5187  AN AUGMENTED SPARSE ITERATIVE COVARIANCE-BASED ESTIMATION METHOD BASED ON ELASTIC NET FOR DOA ESTIMATION
Zhengxiang Wu¹, Ling He¹, Xiao Yan¹, Qian Wang¹, Lanfeng Xie²
¹ School of Astronautics & Aeronautic University of Electronic Science and Technology of China, Chengdu, China
² Chengdu Aircraft Design Institute of China Aviation Industry Group Corporation, Chengdu, China

K5372  BLOCK INVERSE-FREE SPARSE BAYESIAN LEARNING FOR BLOCK SPARSE SIGNAL RECOVERY
Pengfei Chen, Juan Zhao*, Xia Bai
School of Information and Electronics, Beijing Institute of Technology, Beijing, P.R. China

K5398  SIGNAL DETECTION BASED ON RECURSIVE AUTOCORRELATION AND MN METHOD FOR SYNCHRONOUS NYQUIST FOLDING RECEIVER
Xinqun Liu¹*, Tao Li², Shaoying Su¹, Zengping Chen³
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²Artificial Intelligence Research Center (AIRC), National Innovation Institute of Defense Technology (NIIDT), Beijing, China
³School of Electronics and Communication Engineering, Yat-Sen University, Guangzhou, China

K5460  A LOCATION METHOD FOR GROUND MOVING TARGET WITH AZIMUTH SPECTRUM ALIASING IN GEOSYNCHRONOUS SPACEBORNE-AIRBORNE BISTATIC MULTICHANNEL SAR
Ying Zhang¹, Wei Xiong¹, Xichao Dong²³*, Cheng Hu²³, Chengxiang Liu¹, Yang Sun¹
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²School of Information and Electronics, Beijing Institute of Technology, Beijing, China
³Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China

K5711  AN IMPROVED ADAPTIVE PULSE COMPRESSION ALGORITHM BASED ON LINEAR FREQUENCY MODULATION SIGNAL
Jinliang Bai¹*, Peng Qin¹, Hu Li¹, Ran Zhang¹, Xinyu Zhang¹
¹National key laboratory of science and technology on test physics and numerical mathematics, Beijing Institute of Space Long March Vehicle, Beijing, China

K5960  THE GDST FRAME AND INVERSE TRANSFORMS
Yusong Yan¹, Hongmei Zhu²
¹School of Information and Electronics, Beijing Institute of Technology, Beijing, China
²Dept.of Mathematics and Statistic York University
K5961  HARMONIC RETRIEVAL VIA LOW RESOLUTION SAMPLING
Heng Zhu¹, Fangqing Liu¹ and Jian Li²
¹Department of EEIS, University of Science and Technology of China, Hefei, Anhui, China
²Department of ECE, University of Florida, Gainesville, FL 32611, USA

K6228  FPGA IMPLEMENTATION FOR HYPERSPECTRAL TARGET DETECTION WITH ADAPTIVE COHERENCE ESTIMATOR
Xinhua Bai¹, Lu Li¹*, Xiaoming Xie¹, Wei Li², Yuanfeng Wu³, Lianru Gao³
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²School of Information and Electronics, Beijing Institute of Technology, Beijing, China
³Key Laboratory of Digital Earth Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, Beijing, China

K7622  A NEW RIEMANNIAN STRUCTURE IN SPD(N)
Shiqiang Zhang¹, Yueqi Cao¹, Wenyu Li², Fangjia Yan¹, Yihao Luo¹, Huafei Sun¹*
¹School of Mathematics and Statistics, Beijing Institute of Technology, Beijing, China
²School of Computer Science and Technology, Beijing Institute of Technology, Beijing, China

K31017  AN INTERACTING MULTIPLE MODEL SMOOTHING ALGORITHM FOR NONLINEAR MANEUVERING TARGET TRACKING
KeFei Li¹,²,³,⁴, Xiaochuan Ma¹,²,³*, Yu Liu¹,²,³, Dongyu Yuan¹,²
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³University of Chinese Academy of Sciences, Beijing, China
⁴Qingdao Branch of Institute of Acoustics, Chinese Academy of Sciences, Qingdao, China

K31073  A NOVEL WIDEBAND DISTRIBUTED COHERENT RADAR PERFORMANCE EVALUATION METHOD
Yunna Li¹, Zhennan Liang¹, Quanhua Liu¹*, Shaoqiang Chang¹, Kaixiang Zhang¹
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
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K31092 A HIGH-PRECISION POSITION FINDING METHOD FOR SHORT BASELINE RADAR SYSTEM
Jiandong Li1,2, Huayu Fan3, Lixiang Ren1,2*, Erke Mao1,2
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2Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China
3Department of Electronic Engineering, Tsinghua University, Beijing, China

K31096 MODIFIED TWO-FILTER SMOOTHING METHOD FOR COMPLEX NONLINEAR TARGET TRACKING
Chunxia Li1*, Mingxing Li2, De Zhang1, Hai Liu1, Yanmin Chen1
1Information Science Academy of China Electronics Technology Group Corporation, Beijing, China
2The 15th Research Institute of China Electronics Technology Group Corporation, Beijing, China

N0041 INSTANTANEOUS FREQUENCY ESTIMATION OF HFM SIGNAL BASED ON INTERPOLATED STFRFT-VARIABLE WEIGHT LEAST SQUARE FITTING
CAO Weihao1*, YAO Zhixiang1
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N0056 UNDERWATER MANEUVERING TARGET TRACKING ALGORITHM BASED ON INTERACTING MULTIPLE MODEL STRONG TRACKING SQUARE-ROOT CUBATURE KALMAN FILTER
KeFei Li1,2,3,4, Xiaochuan Ma1,2,3*, Yu Liu1,2,3, Dongyu Yuan1,2
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2Key Laboratory of Information Technology for AUV’s, Chinese Academy of Science, Beijing, China
3University of Chinese Academy of Sciences, Beijing, China
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N0174 ANALYSIS OF REFLECTED CHARACTERISTICS OF MICROWAVE/MILLIMETER WAVE BASED ON MULTI-LAYER GRAPHENE
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3School of Aeronautics Shandong Jiaotong University, Haitang Road 5501, Changqing District, Jinan, China
N0217 ENGINEERING CALCULATION METHOD OF AERODYNAMIC COEFFICIENTS FOR AIR-BREATHING HYPERSONIC VEHICLE
Zhu Chenhao1, Cui Naigang1*, Chen Haipeng2
1Department of Astronautics Engineering, Harbin Institute of Technology, Harbin, China
2Shanghai Institute of Spaceflight Control Technology, Shanghai Academy of Spaceflight Technology, Shanghai, China

L1583 HIGH-SPEED AND HIGH-SECURITY HYBRID AES-ECC CRYPTO SYSTEM BASED ON FPGA
Jingqi Zhang1, Wei Gao1, Jiakun Li1, Xiaoyang Tian2, Hua Dang1*
1School of Information and Electronics, Beijing Institute of Technology, Beijing, China
2Standard Department, Datang Mobile Communication Equipment Co., Ltd., Beijing, China

L2870 A PHYSICAL LAYER KEY GENERATION METHOD WITH RELIABLE NEGOTIATION
Yuchen Wang1, Xuanli Wu2*, Zhicong Xu3, Wei Wu4, Hu Li5, Ran Zhang6
1,2,3School of Electronics and Information Engineering, Harbin Institute of Technology, Harbin, China
5,6National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, Beijing, China

M1890 NETWORK CONNECTIVITY PERFORMANCE ANALYSIS OF PLATOON-BASED VEHICULAR AD-HOC NETWORK ON A TWO-WAY LANE
Chenghua Bian1, Junhui Zhao1,2*, Xiaoke Sun2, Xuan Li1, Dan Zou1
1School of Information Engineering, East China Jiaotong University, Nanchang, China
2School of Electronic and Information Engineering, Beijing Jiaotong University, Beijing, China
M2732 AN INTEGRATED SIMULATION PLATFORM FOR SPECTRUM COOPERATION IN VANETS
Shanshan Jin¹,², Chao Dong¹,²*, Wenjing You¹,², Nan Zhong², Qihui Wu¹,²
¹Key Laboratory of Dynamic Cognitive System of Electromagnetic Spectrum Space, Ministry of Industry and Information Technology, Nanjing University of Aeronautics and Astronautics, Nanjing, China
²Department of Electronic and Information Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China

M3551 ROBUST BEAMFORMING FOR SWIPT IN MASSIVE MIMO
Fengchao Zhu¹, Feifei Gao²
¹Rocket Force University of Engineering
²Tsinghua University, Beijing, China

M3625 DESIGN AND OPTIMIZATION OF AGENT-AND-FORWARD SYSTEM WITH MULTI-SOURCE AND MULTI-RELAY
Junwei Bao¹,², Dazhuan Xu¹*, Hao Luo¹, Dan Chen¹
¹College of Electronics and Information Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China
²College of Science, Nanjing University of Aeronautics and Astronautics, Nanjing, China

M4532 COMPRESSED SENSING FOR PHYSICAL LAYER SECURITY IN SINGLE RELAY COOPERATIVE SYSTEM
Guangyao Han¹, Xiaomei Fu¹, Qing Lyu²
¹School of Marine Sci. and Tech. Tianjin University Tianjin, China
²School of Electrical and Information Eng. Tianjin University Tianjin, China

M5190 EFFECT ANALYSIS OF PASSIVE NODE MOBILITY ON UNDERWATER OPTICAL COMMUNICATIONS
Li Xu¹, XiaoYa Hu¹ Wei Li², XiaoYa Hu¹*
¹School of Artificial Intelligence and Automation, Huazhong University of Science and Technology, Wuhan 430074, China
²Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan 430074, China

M5833 A LOW-COMPLEXITY 2D DOA ESTIMATION ALGORITHM FOR MASSIVE MIMO SYSTEMS
Wei Wu, Beizuo Zhu, Leiming Tang, Xiaofei Zhang*
Nanjing University of Aeronautics and Astronautics, Nanjing, China
M6562 ASNET: ANTENNA SELECTION LEARNING NETWORK FOR MOBILE TERMINAL DEVICES
Chia-Hung Lin1,5, Chao-Kai Wen2, Member, IEEE, Shi Jin3, Senior Member, IEEE, Wei-Ho Chung4,5, and Ta-Sung Lee1,5, Fellow, IEEE
1Institute of Communications Engineering, National Chiao Tung University, Taiwan
2Institute of Communications Engineering, National Sun Yat-sen University, Taiwan
3National Mobile Communications Research Laboratory, Southeast University, China
4Department of Electrical Engineering, National Tsing Hua University, Taiwan
5Center for mmWave Smart Radar Systems and Technologies, National Chiao Tung University, Taiwan

M6945 PROPERTIES OF BERNOULLI RANDOM PROJECTION FOR EMBEDDING SUBSPACES
Qinghua Liu, Gen Li, and Yuantao Gu
Beijing National Research Center for Information Science and Technology (BNRist) and Department of Electronic Engineering, Tsinghua University, Beijing, China

M6946 WHY SUBSPACE CLUSTERING WORKS ON COMPRESSED DATA?
Linghang Meng, Gen Li, and Yuantao Gu
Beijing National Research Center for Information Science and Technology (BNRist) and Department of Electronic Engineering, Tsinghua University, Beijing, China

M31001 A DATA TRANSMISSION MODEL IN MULTIMODE HETERGENEOUS WIRELESS NETWORKS
Feng Jin1, Xianlie Li1*, Donglin Bai1, Yang Du1, Yu Song1
1College of Information and Communication, National University of Defense Technology, Wuhan, China

Poster Session 15: GNSS Signal Processing and Positioning

Time: 15:00 - 16:00, December 13, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Dr. Tao Lin, UniStrong, China

N0892 GNSS ISL BASED NAVIGATION OF SATELLITES IN GEOTRANSFER ORBITS
Yifan Zhou1, Wende Huang1, Leyuan Sun1, Yueke Wang1*, Chen Zhang2
1College of Artificial Intelligence at National University of Defense Technology, Changsha, China
2Beijing Satellite Navigation Center, Beijing, China
N0930  AUTONOMOUS TIME SYNCHRONIZATION USING BEIDOU INTER-SATELLITE LINK RANGING
Leyuan Sun¹, Yuan Gao², Wende Huang¹, Ping Li³, Yifan Zhou¹, Jun Yang¹*  
¹College of Intelligence Science and Technology, National University of Defense Technology, Changsha, China  
²Beijing Satellite Navigation Center, Beijing, China  
³Chongqing Normal University, Chongqing, China

P2247  RESEARCH ON GNSS ANTI-SPOOFING INTERFERENCE ALGORITHM BASED ON MUTI-RECEIVER
Xiao Liu¹,², Jian Li¹,²*, Tu Xu¹,²  
¹Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China  
²Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China

P2283  TRACKING OF MOVING TARGET BASED ON SIAMMASK FOR VIDEO SAR SYSTEM
Zihan Liang¹, Chaojie Lian², Yun Zhang¹, Huilin Mu¹, Gaopeng Li²  
¹School of Electronic and Information Engineering Harbin Institute of Technology Harbin, China  
²Beijing Institute of Aerospace Systems Engineering Beijing, China

P2864  PERFORMANCE ANALYSIS OF DIFFERENT NONCOHERENT INTEGRATION ALTERNATIVES FOR WEAK GPS SIGNAL ACQUISITION
Wen Zhang¹*, Yanqun Wu¹*, Lina Ma¹, Hongyang Bai²,³, Wen Chen¹, Tianyu Chen¹, Zuyong Wu¹  
¹College of Meteorology and Oceanology, National University of Defense Technology, Changsha, China  
²College of Aeronautics and Astronautics, National University of Defense Technology, Changsha, China  
³School of Energy and Power Engineering, Nanjing University of Science and Technology, Nanjing, China

P2949  ANALYSIS AND APPLICATION OF CNR PERFORMANCE OF STAP ANTI-JAMMING METHOD FOR GNSS RECEIVER
Yi Guo¹*, Ming Fan², Xiaoyan Ding³, Fangjun Yan¹, Weihua Xie¹, Min Kong¹  
¹Beijing Satellite Navigation Center, Beijing, P.R.China  
²System Engineering Research Institute, Beijing, P.R.China  
³Hebei Engineering Research Center for Geographic Information Application, Institute of Geographical Sciences, Hebei Academy of Sciences, Shijiazhuang, P.R.China
P3216  A FAST SATELLITE SELECTION ALGORITHM FOR GPS / BD INTEGRATED NAVIGATION SYSTEM BASED ON K-MEANS++ CLUSTERING ALGORITHM
Tu Xu 1,2, Jian Li 1,2, Xiaolu 1,2
1 Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing, China
2 Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing, China

P5807  ASSESSMENT OF ULTRA-TIGHTLY COUPLED GNSS/INS INTEGRATION SYSTEM TOWARDS AUTONOMOUS GROUND VEHICLE NAVIGATION USING MOBILE-PHONE IMU
Yiran Luo 1,2,3, Chunyang Yu 1, Bing Xu 1, Guang-Je Tsai 5, Jian Li 1,2, You Li 3, and Naser El-Sheimy 3
1 Radar Research Lab, School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China
2 Key Laboratory of Electronic and Information Technology in Satellite Navigation (Beijing Institute of Technology), Ministry of Education, Beijing 100081, China
3 Department of Geomatics Engineering, University of Calgary, Calgary, AB T2N 1N4, Canada
4 Interdisciplinary Division of Aeronautical and Aviation Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong, China
5 Dept. of Geomatics Engineering, National Cheng-Kung University, No. 1, Daxue Road, East District, Tainan, Taiwan

P21002  AN ALGORITHM USING TRIPLE-FREQUENCY PSEUDORANGE-CARRIER PHASE COMBINATION FOR CYCLE-SLIP DETECTION AND REPAIR
Min KONG 1, Fangjun YAN 1, Lili LIU 1, Pengpeng XU 1, Yuan GAO 1*
1 Beijing Satellite Navigation Center, Beijing, China

P21003  AN ADAPTIVE TIME HATCH FILTERING OF CARRIER PHASE SMOOTHING PSEUDORANGE
Yuan GAO 1*, Min KONG 1, Lili LIU 1, Pengpeng XU 1, Fangjun YAN 1
1 Beijing Satellite Navigation Center, Beijing, China
Poster Session 16: Signal Processing for Communications and Networks

Time: 15:00 - 16:00, December 13, 2019
Place: Crowne Grand Ballroom A1, B2 of Hotel
Chair: Prof. Rui Wang, Beijing Institute of Technology

C1419 MODIFIED ITERATIVE BP-CNN DECODER UNDER CORRELATED NOISE WITH SYMMETRIC $\alpha$-STABLE DISTRIBUTIONS
Senlin Li$^{1,2}$, Sihui Zheng$^{1,2}$, Jingwen Zhang$^3$, Xiang Chen$^{1,2,*}$, Zesong Fei$^3$
$^1$School of Electronics and Information Technology, Sun Yat-sen University, Guangzhou 510006, China
$^2$Key Lab of EDA, Research Institute of Tsinghua University in Shenzhen (RTS), Shenzhen 518075, China
$^3$School of Information and Electronics, Beijing Institute of Technology, Beijing 100081, China

C5266 AN ADVANCED ALGORITHM FOR SPECTRUM ALLOCATION OF PRIMARY USERS BASED ON COUROT GAME
NaiQian Zhang$^1$, Dou Yang$^1$, LiBiao Jing$^{2,*}$
$^1$School of Information and Communication Engineering, Beijing, China
$^2$Communication University of China, Beijing, China

C7343 AN ENERGY-EFFICIENT ROUTING PROTOCOL FOR WIRELESS SENSOR NETWORKS THROUGH ESTIMATING SINGLE LINKAGE HIERARCHICAL CLUSTERING
Dekang Zhu$^{1,*}$, Dan P. Guralnik$^2$, Bill Moran$^3$
$^1$Unmanned Systems Research Center, National Innovation Institute of Defense Technology, Beijing, China
$^2$Dept of Electrical & Systems Engineering, University of Pennsylvania, Philadelphia, United States
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C31088 TARGET DETECTION ALGORITHM FOR AIRBORNE RADAR BASED ON MAP INFORMATION
Wang Changjie
BIT, Beijing, 10000, China

N0280 TOWARDS TRACING BITCOIN CLIENT USING NETWORK TRAFFIC ANALYSIS
Wenshu Guo$^1$, Jie Zhang$^2$
$^1$Beijing Technology and Business University, Beijing, P. R. China
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RESEARCH ON STEP RESPONSE CHARACTERISTICS OF FLEXIBLE DC FIBER-OPTIC CURRENT TRANSFORMER
Liu Bin\textsuperscript{1*}, Deng Xiaopin\textsuperscript{1}, Li Jianguang\textsuperscript{2}, Wu Zhejun\textsuperscript{2}, Liu Dongwei\textsuperscript{2}, Liu Boyang\textsuperscript{2}, Xiao Hao\textsuperscript{2}, Lei Jun\textsuperscript{2}
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About Chongqing

About Chongqing City

Chongqing is China's famous historical and cultural city. It is one of four municipalities in China and the most economically important city in West China. Located on the edge of the Yungui Plateau, and surrounded by small green capped mountains, Chongqing City is intersected by the Jialing River and the upper reaches of the Yangtze. Its Ba cultures, Three Gorges culture, The Three Kingdoms culture, modern urban civilization make Chongqing feature in extremely rich cultural tourism resources. Also, Chongqing has the unique geographical conditions and the collecting of the mountains, water, forestry, spring, waterfall, hole, gorge; and the most outstanding peculiar natural tourism resource is canyon scenery. The famous are the Three Gorges (Qutang Gorge, Wu Gorge, Xiling Gorge) and Small Three Gorges. Also, the Three Gorges Dam and Gezhou Dam in Chongqing are world-famous.

About Ciqikou (Chongqing Ancient Town)

Meaning "Porcelain Port" as porcelain has long been made & transported from here, located in ShaPingBa, on the banks of the Jialing River. This is a step back in time with several streets of Chongqing as it was, (and still is in some places). It is mostly comprised of Small shops selling tourist stuff, but does lead down to the river where it is possible to board a restaurant boat and where the present Hostel is located. The temple at the top of the hill is worth a visit. It’s worth a visit for a couple of hours. Unlike similar places in China, this one is still in its original state and not a reconstruction. Walking uphill away from the river and main tourist area, it is still populated by regular families and homes as it has always been.
About Hongya Cave (Hongyadong)

Hongya Cave has a history of over 2,300 years. It was a military fortress from the ancient Ba State (1046 B.C. - 256 B.C) to the Ming and Qing Dynasties (1368 - 1911), and was also the site of the earliest and most developed pier of ancient China. The site now houses a large-scale stilt house complex built alongside a steep cliff on the bank of Jialing River. It has become a popular destination for visitors to experience Bayu culture - a Chinese ethnic culture, gaze over the river, and taste delicious food. The stunning night view is a highlight and should not be missed.

Hongyadong is an 11-storey, 75 meters (245 feet) stilt house abutting a steep cliff. It is popular with tourists because it has a similar appearance to a building in Spirited Away - a masterpiece of a famous Japanese cartoonist, Hayao Miyazaki. It is incredible that the 1st floor and the 11th floor are accessible by two different roads. Visitors can take an elevator to each level where various bars, café and restaurants are arranged. Visitors can also see the symbolic Hongya Dripping on the 2nd floor, which is a small waterfall cascading down the cliff-face. It is regarded as one of the 12 Bayu Sites.

About Chongqing Jiefangbei Pedestrian Street

Jiefangbei stands in the most prosperous downtown center of Chongqing. Jiefangbei, or the People’s Liberation Monument, formerly known as the Monument of Victory in the War of Resistance (usually called the "Anti Japanese war"), is a 27.5 meter high structure. It is the center of the city marked as Chongqing’s commercial heart. It is isolated by broad, paved pedestrian square and numerous glassy office skyscrapers and highrise hotels, reminiscent of New York's Times Square or Tokyo's Shibuya district. Jiefangbei Shopping Square, itself completed at the end of 1997, is 400 meters from east to west, and 350 meters from north to south, covering an area of 24,400 m². Around the square are more than 3,000 stores various kinds of shops, with more than two dozen large malls and shopping centers, dozens of star-graded hotels, and offices such as banks, stock markets, trade and finance companies, postal and telecommunication services, and places of entertainment.
About Chaotianmen Square

Chaotianmen Square is a newly-built architecture which situates at the confluence of the Yangtze and Jialing Rivers in the Peninsula of Yuzhong District in Chongqing. This square has gradually become a prosperous zone which shows the rapid development of this historic city.

Standing on the Chaotianmen Square, visitors can get an ideal view to the glorious Yangtze River. The Chaotianmen Square was built in the summer of 1998, covering an area of 800,000 square meters, and the ship-shaped square is one of the largest roof squares in China. This gorgeous river which mixes the past and the present culture of Chongqing City just flow in front of your eyes. During the festival period, there is a large-size ship model which is consisted of thousands of flowers in the center of this Chaotianmen Square for visitors to take photos.

It is composed by four major parts namely the View Scenery Square, the protection shore ladder road, the traffic square and the peripheral environment. It is a symbolic construction of integrated water collection and key position land transportation function. Four towers stand at the corners of a generous public podium planted with Banyan trees. The composition of four buildings represents a four pillared gateway, as well as the four winds, the four seasons, and the four directions of the world. The towers are each 40 metres by 40 metres in plan and stand 80 metres from each other. The total developed area below podium level is 370,000 squares metres with a further 400,000 square metres above podium level.

About Great Hall of the People

Chongqing's Great Hall of the People (and the People's Square in front of the Hall) is an architectural symbol of Chongqing City. Its construction began in 1951, but its design is traditional and mirrors those of China's ancient classical dynasties. It somewhat resembles an enlarged version of the Temple of Heaven in Beijing. The People's Square was only completed in 1997 and is decorated with trees and flowers. The ground of the square is paved with smooth marble tiles; there is magic music fountain; at the southern end of the square stands a stage for performances in the open air. You may see thousands of people dancing on the square in the numerous beautiful lights in the evening.
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