Zhe Zhang

Professor, Ph.D. Supervisor
NSFC Excellent Young Scientists Fund Program (Overseas)
CAS "One Hundred" Talent

DOB:	01/31/1988
ADDRESS (SUZHOU):	Room B203-12, Lab 22
	Suzhou Aerospace Information Research Institute
	158 Dushuhu Ave, Suzhou Industrial Park, Suzhou, Jiangsu 215000, China
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	Aerospace Information Research Institute, Chinese Academy of Sciences
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Working Experience

2023.01–	Lab Director Assistant, Academic Leader
2022.04–	Professor, Ph.D Supervisor
2021.01–2022.04	Associate Professor
	Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing 100190, China
	Suzhou Aerospace Information Research Institute, Suzhou, Jiangsu 215000, China
	Interest Field: Sparse signal processing, Sparse Microwave Imaging, Synthetic aperture radar, Three-dimensional SAR imaging, Combination of signal processing and deep learning.
2023.10–	Double Employed Professor
	University of Chinese Academy of Sciences, Beijing 100190, China
2023.09–	Adjunct Professor
	Qian Xuesen Honors College, Xi'an Jiaotong University, Xi'an, Shaanxi 710049, China
2016.12–2020.06	Post-Doctoral Research Fellow
	George Mason University, Fairfax, VA 22030, USA
	Advisor: Tian, Zhi, Professor, IEEE Fellow
	Interest Field: Sparse signal processing, Atomic norm minimization, Combination of signal processing and deep learning.
2015.12–2016.11	Post-Doctoral Research Scientist
	George Washington University, Washington, DC 20052, USA
	Advisor: Tian, Zhi, Professor, IEEE Fellow
	Cheng, Xiuzhen, Professor, IEEE Fellow
	Interest Field: Sparse signal processing, Atomic norm minimization.

Education

2009.09–2015.07	PH.D./ SIGNAL AND INFORMATION PROCESSING **Institute of Electronics, Chinese Academy of Sciences** **University of Chinese Academy of Sciences** Beijing 100190, China Supervisor: Wu, Yirong, Academician of CAS, Professor *Interest Field: Sparse microwave imaging, Sparse signal processing, Synthetic aperture radar.*
2014.01–2014.04	VISITING STUDENT **University of Connecticut**, Storrs, CT 06269, USA Supervisor: Zhou, Shengli, Professor, IEEE Fellow.
2004.09–2008.07 *2003.09–2004.07*	B. ENG. INFORMATION ENGINEERING SPECIAL CLASS FOR GIFTED YOUNG **Xi'an Jiaotong University** Xi'an, Shaanxi 710049, China.

Research Projects

2023.12–	**Multi-beam Spaceborne High-Resolution Wide-Swath SAR System and Technology**, RMB 25,350,000 Grant: *National Key Research and Development Program of China*, #2023YFB3904900 **Principle Investigator**.
2022.1–	**Sparse Signal Processing and Its Applications in Microwave Imaging**, RMB 3,000,000 Grant: *NSFC Excellent Young Scientists Fund Program (Overseas)* **Principle Investigator**.
2021.1–	**Sparse Signal Processing and Deep Learning with Their Applications in Microwave Imaging**, RMB 4,000,000 Grant: *CAS "One Hundred Talent" Project* **Principle Investigator**.
2021.12–	**High Efficiency Sensing System and Technology of Three-dimensional Microwave Imaging**, RMB 500,000 Grant: *Suzhou S&T Development Project*, #ZXL2022381 **Principle Investigator**.
2021.7–	**Structural Signal Adaptive High Efficiency sensing Theory and Its Applications in Microwave Imaging**, RMB 1,300,000 Grant: *CAS Key Grant* **Principle Investigator**.

2020.1–	**Synthetic Aperture Radar Microwave Vision Three-dimensional Imaging Theory and Application Foundations**, RMB 20,000,000 Grant: *NSFC Major Program*, #61991421, 61991420 **Co-PI**.
2018.8–2018.11	**A Gated LFMCW TDMA MIMO SAR based Hidden Chamber Detector**, USD \$150,000 Grant: *USSOCOM SBIR*, #S173-004-0118 Participant.
2015.12–2020.6	**Task-Cognizant Sparse Sensing for Inference**, USD \$400,000 Grant: *National Science Foundation (NSF) Standard Grant*, #1527396 Participant.
2010.04–2015.07	**Theory, System and Methodology of Sparse Microwave Imaging**, RMB 33,000,000 Grant: *National Major Fundamental Science Research Project (973 Project)*, #2010CB731900 Participant.
2012.04–2015.07	**Advanced Microwave Sensing and Information Processing**, RMB 4,300,000 Grant: *Chinese Academy of Sciences* Participant.

Honors

2022.01	**Excellent Young Scientists Fund Program (Overseas)** / *NSFC*
2021.01	**CAS "One Hundred Talent"** / *Chinese Academy of Sciences*
2021.12	**Suzhou "Gusu Leading Talent"** / *Suzhou City*
2022.12	**Jiangsu "Innovative and Entrepreneurial Talent"** / *Jiangsu Province*
2022	**CAS "Young Cross Teams" Member** / *Chinese Academy of Sciences*

Awards

	National Disruptive Technology Innovation Competition / *Ministry of Science and Technology, China*
2022.03	*Excellence Prize in Final Competition*
2021.12	*Winner Prize*
2021.12	*Excellence Prize*

2008.04	**TI DSP Contest** / *Texas Instruments* *Winner Prize*
2008.02 *2007.02*	**COMAP Mathematical Modeling Contest** / *COMAP* *Meritorious* *Honorable Mentioned*
2006.09	**China College Mathematical Modeling Contest** / *CSIAM* *Second Prize*

Languages

ENGLISH: Professional (Reside in US for 5 years, CET-6/PETS-5/WSK pass, TOEFL 96)
JAPANESE: Fair

Open Source Projects and Services

2006.04–2015.11	BMY BBS (http://bbs.xjtu.edu.cn/, http://bmybbs.com/) Host: https://github.com/bmybbs?type=source *Technical Leader*
2010.06–2019.04	KYXK BBS (http://bbs.ucas.ac.cn/, http://kyxk.net/) *Technical Leader*
2018.09–	hCNN (https://github.com/pzhg/hCNN) *Principle Developer*

Services

Professional Society Membership and Services

2022.07– *2021.11–*	**Xi'an Jiaotong-Liverpool University** *External Mentor* *Pilotage Mentor*
2016.01– *2010.01–2015.12*	**IEEE** *Member* *Student Member*
2021.04–	**CIE** *Member*
2020.11–	**JSAAI** *Member*

Journal Reviewers

- *IEEE Transactions on Signal Processing* Journal, SCI.

- *Signal Processing* Journal, SCI.

- *National Science Open* Journal, SCI.

- *IEEE Transactions on Geoscience and Remote Sensing* Journal, SCI.

- *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* Journal, SCI.

- *IEEE Geoscience and Remote Sensing Letters* Journal, SCI.

- *IET Radar, Sonar & Navigation* Journal, SCI.

- *IET Electronics Letters* Journal, SCI.

- *IET Signal Processing* Journal, SCI.

- *Science China Information Science* Journal, SCI.

- *Cogent Engineering* Journal, SCI.

- *Journal of Radars* Journal, EI.

Organizing Committee Member and Technical Program Chair

- 2022 International Workshop on Microwave Vision and 3D SAR Imaging (MiViSAR 2022), Suzhou, China, Oct 17-19, 2022.

Session Chair

- 2022 IET International Radar Conference, Chongqing, China, Dec 3-5, 2023.

- 2024 PhotonIcs and Electromagnetics Research Symposium (PIERS), Chengdu, China, Apr 21-25, 2024.

TPC Member / Reviewer

2024	PIERS 2024, ICC 2024, CoSeRa 2024.
2023	EECSI 2023, iSemantic 2023, Globlecom 2023, SIRS 2023, IJCDS 2023, IJEECS 2023, IET Radar 2023.
2022	EEET 2022, EECSI 2022, IJCDS, IJECE 2021-22, FSDM 2022.
2021	IJEECS 2021, BEEI 2020-21, ICITech 2021, FSDM 2021, TELKOMNIKA 2021.
2020	CITEI 2020, SIRS 2020, FSDM 2020.
2019	SIRS 2019, DISP 2019

2018	CoSeRa 2018, SIRS 2018, EECSI 2018, ICW-TELKOMNIKA 2018, FSDM 2018.
2017	ICITech 2017, EECSI 2017, SIRS 2017, FSDM 2017.
2016	CoSeRa 2016.
2015	CoSeRa 2015, ISSPIT 2015, ICSPDM 2015.

Publications (Bold for Corresponding / First Authorship)

JOURNAL ARTICLES

1. **Z. Wang, Z. Wang, X. Qiu, and Z. Zhang∗, "Global Polarimetric Synthetic Aperture Radar Image Segmentation with Data Augmentation and Hybrid Architecture Model," Remote Sens., vol. 16, no. 2, p. 380, Jan. 2024, doi: 10.3390/rs16020380.**

2. **Y. Zhao, Q. Liu, H. Tian, B. W.-K. Ling, and Z. Zhang∗, "DeepRED Based Sparse SAR Imaging," Remote Sens., vol. 16, no. 2, p. 212, Jan. 2024, doi: 10.3390/rs16020212.**

3. **Y. Zhao, Q. Liu, H. Tian, M. Luo, B. W.-K. Ling, and Z. Zhang∗, "New convex approaches to general MVDR robust adaptive beamforming problems," Electron. Lett., vol. 59, no. 18, p. e12957, Sep. 2023, doi: 10.1049/ell2.12957.**

4. Y. Bai, J. Kang, X. Ding, A. Zhang, Z. Zhang, and N. Yokoya, "LaMIE: Large-Dimensional Multipass InSAR Phase Estimation for Distributed Scatterers," IEEE Trans. Geosci. Remote Sens., vol. 61, pp. 1–15, Nov. 2023, doi: 10.1109/TGRS.2023.3330971.

5. **Z. Wang, Z. Wang, X. Qiu, J. Kang, and Z. Zhang∗, "A Study on SAR High Dimensional Feature Extension Method Based on Full Polarization Transformation and Its Application in Fine Classification of Crops," Journal of Radars, *under review*, in Chinese.**

6. **D. Zhao, Z. Zhang∗, D. Lu, J. Kang, X. Qiu, and Y. Wu, "CVGG-Net: Ship Recognition for SAR Images Based on Complex-Valued Convolutional Neural Network," IEEE Geosci. Remote Sens. Lett., vol. 20, pp. 1–5, 2023, doi: 10.1109/LGRS.2023.3316133.**

7. **M. Shao, Z. Zhang∗, J. Li, J. Kang, and B. Zhang, "TADCG: A Novel Gridless Tomographic SAR Imaging Approach Based on the Alternate Descent Conditional Gradient Algorithm With Robustness and Efficiency," IEEE Trans. Geosci. Remote Sens., vol. 62, pp. 1–13, 2024, doi: 10.1109/TGRS.2023.3345454.**

8. **Y. Wu, Z. Zhang∗, X. Qiu, Y. Zhao and W. Yu, "MF-JMoDL-Net: A Deep Network for Azimuth Undersampling Pattern Design and Ambiguity Suppression for Sparse SAR Imaging", IEEE Trans. Geosci. Remote Sens., *under review*.**

9. G. Zhou, Z. Xu, Y. Fan, Z. Zhang, X. Qiu, B. Zhang, K. Fu∗ and Y. Wu, "HPHR-SAR-Net: Hyper-pixel High-resolution SAR Imaging Network Based on Nonlocal Total Variation," IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., vol. 16, pp. 8595–8608, 2023, doi: 10.1109/JSTARS.2023.3295728.

10. **S. Gao, Z. Zhang∗, M. Wang, Y. Zhang, J. Zhao, B. Zhang, Y. Wang and Y. Wu, "Gridless Single Snapshot Super-resolution DoA Estimation Method for Non-uniform Linear Arrays in Automotive Radars with Efficiency," IEEE Trans. Vehicular Tech.,** *under review*.

11. **M. Wang, Z. Zhang∗, X. Qiu, S. Gao, and Y. Wang, "ATASI-Net: An Efficient Sparse Reconstruction Network for Tomographic SAR Imaging with Adaptive Threshold," IEEE Trans. Geosci. Remote Sens., vol. 61, pp. 1–18, 2023, doi: 10.1109/TGRS.2023.3268132.**

12. **R. Shi, Z. Zhang∗, X. Qiu, and C. Ding, "A Novel Gradient Descent Least-Squares (GDLSs) Algorithm for Efficient Gridless Line Spectrum Estimation With Applications in Tomographic SAR Imaging," IEEE Trans. Geosci. Remote Sens., vol. 61, pp. 1–13, 2023, doi: 10.1109/TGRS.2023.3273568.**

13. **J. Li, Z. Xu, Z. Li, Z. Zhang∗, B. Zhang, and Y. Wu, "An Unsupervised CNN-Based Multichannel Interferometric Phase Denoising Method Applied to TomoSAR Imaging," IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., vol. 16, pp. 3784–3796, Jul. 2023, doi: 10.1109/JSTARS.2023.3263964.**

14. **Y. Zhao, Y. Chen, H. Tian, X. Quan, B. W.-K. Ling, and Z. Zhang∗, "Wide angle SAR imaging method based on hybrid representation," Electron. Lett., vol. 59, no. 15, p. e12897, Aug. 2023, doi: 10.1049/ell2.12897.**

15. **P. Jiang, Z. Zhang∗, B. Zhang, and Z. Xu, "A novel TomoSAR imaging method with few observations based on nested array," IET Radar, Sonar Navig., vol. 17, no. 6, pp. 925–938, Jun. 2023, doi: 10.1049/rsn2.12388.**

16. J. Kang∗, T. Ji, Z. Zhang, and R. Fernandez-Beltran, "SAR Time Series Despeckling via Nonlocal Matrix Decomposition in Logarithm Domain," Signal Processing, vol. 209, p. 109040, Aug. 2023, doi: 10.1016/j.sigpro.2023.109040.

17. **J. Kang∗, F. Tong, Y. Bai, T. Ji, and Z. Zhang∗, "SAR Time Series Despeckling and Component Analysis Method based on Matrix Decomposition," Journal of Radars, vol. 12, no. 5, pp. 1031–1043, Mar. 2023, doi: 10.12000/JR22242,** in Chinese.

18. X. Ding, J. Kang∗, Z. Zhang, Y. Huang, J. Liu, and N. Yokoya, "Coherence-Guided Complex Convolutional Sparse Coding for Interferometric Phase Restoration," IEEE Trans. Geosci. Remote Sens., vol. 60, pp. 1–14, 2022, doi: 10.1109/TGRS.2022.3228279.

19. Z. Zhu, J. Kang∗, T. Ji, Z. Zhang, and R. Fernandez-Beltran, "SAR Time-Series Despeckling via Nonlocal Total Variation Regularized Robust PCA," IEEE Geosci. Remote Sens. Lett., vol. 19, pp. 1–5, 2022, doi: 10.1109/LGRS.2022.3227187.

20. **Y. Zhao, W. Huang, X. Quan, W.-K. Ling, and Z. Zhang∗, "Data-driven sampling pattern design for sparse spotlight SAR imaging," Electron. Lett., vol. 58, no. 24, pp. 920–923, Nov. 2022, doi: 10.1049/ELL2.12650.**

21. **Z. Xu, B. Zhang, Z. Zhang∗, M. Wang, and Y. Wu, "Nonconvex-Nonlocal Total Variation Regularization Based Joint Feature-Enhanced Sparse SAR Imaging," IEEE Geosci. Remote Sens. Lett., vol. 19, pp. 1–1, 2022, doi: 10.1109/lgrs.2022.3222185.**

22. Z. Lyu, X. Qiu∗, Z. Zhang and C. Ding, "Error Analysis of Polarimetric Interferometric SAR under Different Processing Modes In Urban Areas,", Journal of Radars, 2022, doi: 10.12000/JR22059, in Chinese.

23. **Z. Xu, G. Zhou, B. Zhang, Z. Zhang∗ and Y. Wu, "Sparse Regularization Method Combining SVA for Feature Enhancement of SAR Images," Electronics Letters, Jun. 2022, doi: 10.1049/ell2.12509**.

24. **Y. Zhao, J. Xu, X. Quan, L. Cui and Z. Zhang∗, "L_1 Minimization with Perturbation for Off-grid Tomographic SAR Imaging," Journal of Radars, vol. 11, no. 1, pp. 52-61, 2022**, in Chinese.

25. B. Du, X. Qiu∗, Z. Zhang, B. Lei and C. Ding, "Tomographic SAR Imaging Method Based on Sparse and Low-rank Structures," Journal of Radars, vol. 11, no. 1, pp. 62-70, 2022, in Chinese.

26. **Z. Zhang∗, B. Zhang, C. Jiang, X. Liang, L. Chen, W. Hong and Y. Wu, "The First Airborne Experiment of Sparse Microwave Imaging: Prototype System Design and Result Analysis," Available: http://arxiv.org/abs/2110.10675**.

27. **Z. Zhang∗, Y. Wang, and Z. Tian, "Efficient Two-Dimensional Line Spectrum Estimation Based on Decoupled Atomic Norm Minimization," Signal Processing, Vol. 163, pp. 95-106, 2019**.

28. **Z. Zhang∗, B. Zhang, W. Hong and Y. Wu, "Accelerated Error Compensation Algorithm of Sparse Microwave Imaging with Combination of Map-drift and SAR Raw Data Simulator," Journal of Radars, vol. 5, no. 1, pp. 25-34, 2016**, in Chinese.

29. **B. Zhang, Z. Zhang∗, C. Jiang, Y. Zhao, W. Hong and Y. Wu, "System Design and First Airborne Experiment of Sparse Microwave Imaging Radar: Initial Results," Science China Information Sciences (Series F), vol. 58, no. 6, 2015**.

30. C. Jiang∗, Y. Zhao, Z. Zhang, B. Zhang, and W. Hong, "Azimuth Sampling Optimization Scheme for Sparse Microwave Imaging Based on Mutual Coherence Criterion," Journal of Electronics and Information Technology, vol. 37, no. 3, 2015.

31. Y. Wu, W. Hong, B. Zhang∗, C. Jiang, Z. Zhang and Y. Zhao, "Current Developments of Sparse Microwave Imaging," Journal of Radars, vol.3, no. 4, pp. 383–395, 2014, in Chinese.

32. C. Jiang∗, B. Zhang, J. Fang, Z. Zhang, W. Hong, Y. Wu and Z. Xu, "An efficient Lq regularization algorithm with range-azimuth decoupled for SAR imaging," Electronics Letters, vol. 50, no. 3, pp. 204–205, 2014.

33. **Z. Zhang∗, B. Zhang, C. Jiang, Y. Xiang, W. Hong, and Y. Wu, "Influence factors of sparse microwave imaging radar system performance: approaches to waveform design and platform motion analysis," Science China Information Sciences (Series F), vol. 55, no. 10, pp. 2301–2317, 2012**.

34. C. Jiang∗, B. Zhang, Z. Zhang, W. Hong, and Y. Wu, "Experimental results and analysis of sparse microwave imaging from spaceborne radar raw data," Science China Information Sciences (Series F), vol. 55, no. 8, pp. 1801–1815, 2012.

35. M. Xie∗, R. Qiao, Z. Pan, D. Li, Y. Qiao and Z. Zhang, "Realization of an Improved Absolute Error Inequality Algorithm on DM642," Microelectronics & Computer, vol. 27, no. 4, pp. 182-185, 2010, in Chinese.

36. T. Wang∗, R. Qiao, Z. Pan, D. Li, Y. Qiao, F. Gao and Z. Zhang, "Research and Application of Vector Quantization Algorithm Based on DM642", in Proceedings of 2008 TI DSP Contest, pp. 143–161, Publishing House of Electronics Industry, Beijing, 2008, in Chinese.

Keynotes / Invited Talks

1. **Z. Zhang∗, "无网格稀疏信号处理及其在微波成像中的应用", in 当稀疏信号处理技术遇见雷达研讨会, Nanjing, 2021,** *invited.*

Invited Peer-reviewed Conference Papers

1. **Z. Zhang∗, M. Jian, Z. Lu, H. Chen, S. James, C. Wang. and R. Gentile, "Embedded Micro Radar for Pedestrian Detection in Clutter", in IEEE International Radar Conference (RADAR 2020), 2020,** *invited.*

2. **Z. Zhang∗, B. Zhang, W. Hong, H. Bi and Y. Wu, "SAR Imaging of Moving Target in a Sparse Scene Based on Sparse Constraints: Preliminary Experiment Results," in 2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2015),** *invited.*

3. **W. Hong, B. Zhang, Z. Zhang∗, C. Jiang, Y. Zhao and Y. Wu, "Radar Imaging with Sparse Constraint: Principle and Initial Experiment," in 10th European Conference on Synthetic Aperture Radar (EuSAR 2014),** *invited.*

Peer-reviewed Conference Papers

1. **M. Wang, S. Gao, Z. Zhang∗, and X. Qiu, "A Novel Multi-Channel Phase Error Estimation Method Based On Stochastic Optimization For Tomographic SAR Autofocusing," in IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium, Jul. 2023, pp. 7953–7956. doi: 10.1109/IGARSS52108.2023.102829**

2. T. Chen, Y. Meng, G. Zhou, Z. Zhang, B. Zhang, and Y. Wu, "An Improved Imaging Method for Highly-Squinted SAR Based on Hyper-Optimized ADMM," in IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium, Jul. 2023, pp. 4548–4551. doi: 10.1109/IGARSS52108.2023.10281842.

3. **P. Jiang, Z. Zhang∗, and B. Zhang, "Efficient Sparse MIMO SAR Imaging with Fast Iterative Method Based on Back Projection and Approximated Observation," in 2022 5th International Conference on Electronics and Electrical Engineering Technology (EEET), Dec. 2022, pp. 34–40. doi: 10.1109/EEET58130.2022.00014.**

4. **S. Gao, Z. Zhang∗, B. Zhang, and Y. Wu, "Gridless tomographic SAR imaging based on accelerated atomic norm minimization with efficiency," in International Conference on Radar Systems (RADAR 2022), 2022, pp. 48–53. doi: 10.1049/icp.2022.2290.**

5. **M. Wang, Z. Zhang∗, Y. Wang, S. Gao, and X. Qiu, "TomoSAR-ALISTA: Efficient TomoSAR imaging via deep unfolded network," in International Conference on Radar Systems (RADAR 2022), 2022, pp. 528–533. doi: 10.1049/icp.2023.1289.**

6. Z. Xu, G. Zhou, B. Zhang, Z. Zhang, and Y. Wu, "An Accurate Sparse SAR Imaging Method for Joint Feature Enhancement Based on Nonconvex-Nonlocal Total Variation Regularization," in 14th European Conference on Synthetic Aperture Radar (EUSAR 2022), 2022, pp. 576–581. [Online]. Available: https://ieeexplore.ieee.org/document/9944320.

7. M. Liu, J. Li, Z. Zhang, B. Zhang, and Y. Wu, "Azimuth Ambiguities Suppression for Multichannel SAR Imaging Based on L2,q Regularization: Initial Results of Non-sparse Scenario," in International Geoscience and Remote Sensing Symposium (IGARSS) 2021, 2021, pp. 3153–3156.

8. B. Du, Z. Zhang, X. Qiu, B. Lei, and C. Ding, "Multi-aspect Tomographic SAR Imaging Approach via Distributed Compressed Sensing and Joint Sparsity," in CIE Radar Conference 2021, 2021, pp. 2–5.

9. Z. Wang, X. Lin, X. Xiang, Z. Zhang, Z. Tian, K. Pham, E. Blasch and G. Chen, "A hidden chamber detector based on a MIMO SAR", in Proc. SPIE 11017, Sensors and Systems for Space Applications XII, 1101706, 2019.

10. P.Xu, Z. Tian, Z. Zhang and Y. Wang, "COKE: Communication-Censored Kernel Learning via random features", in the 2019 IEEE Data Science Workshop (DSW 2019), 2019.

11. **Z. Zhang, X. Chen and Z. Tian∗, "A Hybrid Neural Network Framework and Application to Radar Automatic Target Recognition", in the 6th IEEE Global Conference on Signal and Information Processing (GlobalSIP 2018), 2018**.

12. **Z. Zhang and Z. Tian∗, "ANM-PhaseLift: Structured Line Spectrum Estimation from Quadratic Measurements", in 7th IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2017), 2017**.

13. **Z. Tian, Z. Zhang∗ and Y. Wang, "Low-complexity optimization for Two-Dimensional Direction-of-arrival Estimation via Decoupled Atomic Norm Minimizationg", in 42th International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2017), 2017**.

14. **Z. Zhang∗, Z. Tian, B. Zhang, W. Hong, W. Hong and L. Li, "Multi-channel SAR Covariance Matrix Estimation Based on Compressive Covariance Sensing", in 4th International Workshop on Compressive Sensng Theory and its Applications to Radar, Sonar and Remote Sensing (CoSeRa 2016), 2016**.

15. C. Jiang∗, Y. Lin, Z. Zhang, B. Zhang and W. Hong, "WASAR Imaging based on message passing with structured sparse constraint: approach and experiment", in 3th International Workshop on Compressive Sensng Theory and its Applications to Radar, Sonar and Remote Sensing (CoSeRa 2015), 2015.

16. X. Quan∗, C. Jiang, Z. Zhang, B. Zhang and Y. Wu, "A Study of BP-CAMP Algorithm for SAR Imaging," in 2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2015), 2015.

17. X. Quan∗, Z. Zhang, C. Jiang, B. Zhang and Y. Wu, "Comparison of Several Sparse Reconstruction Algorithms in SAR Imaging,", in IET International Radar Conference 2015, 2015.

18. W. Wang∗, B. Zhang, W. Hong, Z. Zhang, Y. Zhao, C. Jiang and H. Bi, " Polarimetric SAR Tomography of Forested Areas Based on Compressive MUSIC," in 2014 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2014), 2014.

19. **Z. Zhang∗, Y. Zhao, C. Jiang, B. Zhang, W. Hong and Y. Wu, "Initial Analysis of SNR / Sampling Rate Constraints in Compressive Sensing based Imaging Radar," in 2nd Workshop on Compressive Sensng Applied to Radar (CoSeRa 2013), 2013**.

20. B. Zhang, C. Jiang∗, <u>Z. Zhang</u>, J. Fang, Y. Zhao, W. Hong, Y. Wu and Z. Xu, "Azimuth Ambiguity Suppression for SAR Imaging based on Group Sparse Reconstruction", in Workshop on Compressive Sensng Applied to Radar (CoSeRa 2013), 2013.

21. **<u>Z. Zhang</u>∗, Y. Zhao, C. Jiang, B. Zhang, W. Hong and Y. Wu, "Autofocus of Sparse Microwave Imaging Radar Based on Phase Recovery," in 2nd IEEE International Conference on Signal Processing, Communications and Computing (ICSPCC 2013), 2013**.

22. **<u>Z. Zhang</u>∗, B. Zhang, W. Hong, and Y. Wu, "Waveform Design for Lq Regularization Based Radar Imaging and An Approach to Radar Imaging with Non-moving Platform," in 9th European Conference on Synthetic Aperture Radar (EuSAR 2012), 2012**.

23. **B. Zhang, <u>Z. Zhang</u>∗, W. Hong, and Y. Wu, "Applications of Distributed Compressive Sensing in Multi-channel Synthetic Aperture Radar," in 1st Workshop on Compressive Sensng Applied to Radar (CoSeRa 2012), 2012**.

PATENTS

1. **<u>Z. Zhang</u>∗, Y. Zhao, B. Zhang, W. Hong and Y. Wu, "一种基于相位恢复的机载稀疏微波成像自聚焦方法," CN:201310737404.4**.

2. **<u>Z. Zhang</u>∗, B. Zhang, W. Hong, Y. Wu and X. Quan, "一种基于 PhaseLift 的稀疏微波成像自聚焦方法," CN:201510227896.1**.

3. B. Zhang, W. Hong, Y. Wu and <u>Z. Zhang</u>∗, "装载于慢速平台上的成像雷达的稀疏微波成像方法及装置," CN:201310117111.6.

4. X. Quan∗, B. Zhang, C. Jiang, Y. Zhao, <u>Z. Zhang</u> and Y. Wu, "一种基于稀疏度估计的分维度阈值迭代稀疏微波成像方法," CN:201410497525.0.

5. Y. Wu, X. Quan∗, B. Zhang and <u>Z. Zhang</u>, "基于正则化的偏置相位中心天线成像方法," CN:201610202747.4.