毕辉研究生导师介绍

姓名： 毕辉　　性 别：男　　行政职务 ：

专业技术职务： 副研究员　　办公电话： 1565239629　　导师类别： 硕士生导师

最后学历： 博士毕业　　最后学位： 博士　　最后毕业学校： 中国科学院大学

电子邮件： bihui@nuaa.edu.cn

工作单位： 电子信息工程学院

◇ 学科研究方向一：

专业名称： 电子与通信工程 （招收硕士研究生）　　学科代码**11**： 085208

(1) 合成孔径雷达成像;
(2) 稀疏微波成像;
(3) 层析、差分层析合成孔径雷达成像;
(4) 合成孔径雷达图像增强
(5) 雷达恒虚警率检测;
(6) 动目标检测与成像等。

◇ 个人简历（学历、学术经历及社会兼职）：

毕辉博士2017年7月于中国科学院大学/中国科学院电子学研究所获得工学博士学位（信号与信息处理）。2017年7月-2018年11月于新加坡南洋理工大学电子与电气工程学院从事博士后研究工作。现为南京航空航天大学电子信息工程学院副研究员，硕士生导师，长空学者。主要研究方向为稀疏微波成像，合成孔径雷达数据处理与应用，稀疏信号处理，层析合成孔径雷达成像等。先后参与了国家973计划、863 计划、创新团队国际合作伙伴计划、国家自然科学基金等项目的研究工作。近三年共发表文章30余篇，申请发明专利10余项，参与编写中英文专著3部。其中以第一作者在IEEE Transactions on Geoscience and Remote Sensing (IEEE TGRS)、IEEE Geoscience and Remote Sensing (IEEE GRSL)等遥感领域顶级期刊发表SCI文章11篇，EI文章7篇，授权国家发明专利2项。现为IEEE 会员，中国图象图形学学会会员，IEEE TGRS，IEEE JSTARS，IEEE GRSL，IEEE Access，Science China等期刊审稿人。近年来与意大利比萨大学、德国宇航局、新加坡南洋理工大学、美国康涅迪格大学、美国爱荷华州立大学、英国帝国理工大学等多家国外研究机构在SAR成像、稀疏信号处理、层析合成孔径雷达成像等领域开展了广泛的交流与合作，联合发表多篇高水平文章。

◇ 发表学术论文,出版专著情况：

(一) 期刊论文

[1] Hui Bi, Guoan Bi, Bingchen Zhang, and Wen Hong. Complex image based sparse SAR imaging and its equivalence. IEEE Transactions on Geoscience and Remote Sensing. 2018, 56(8): 5006-5014.

[2] Hui Bi, Bingchen Zhang, XiaoXiang Zhu, Chenglong Jiang, and Wen Hong. Extended chirp scaling-baseband azimuth scaling based azimuth-range decouple L1 regularization for TOPS SAR imaging via CAMP. IEEE Transactions on Geoscience and Remote Sensing. 2017, 55(7): 3748-3763.

[3] Hui Bi, Bingchen Zhang, XiaoXiang Zhu, Wen Hong, Jinping Sun, and Yirong Wu. L1 regularization based SAR imaging and CFAR detection via complex approximated message passing. IEEE Transactions on Geoscience and Remote Sensing. 2017, 55(6): 3426-3440.

[4] Hui Bi, Wen Hong, Bingchen Zhang, Jinping Sun, Jingjing Wang, and Guoan Bi. An improved iterative thresholding algorithm for sparse SAR imaging. IEEE Transactions on Geoscience and Remote Sensing. 2019. (Under Review)

[5] Hui Bi, Jingjing Zhang, Lu Wang, and Guoan Bi. Airborne FMCW SAR sparse imaging with motion compensation. IEEE Transactions on Geoscience and Remote Sensing. 2018. (Under Review)

[6] Hui Bi, Jingjing Wang, and Guoan Bi. Wavenumber domain algorithm for practical FMCW SAR imaging. IEEE Transactions on Geoscience and Remote Sensing. 2018. (Under Review)

[7] Hui Bi and Guoan Bi. A novel iterative soft thresholding algorithm for L1 regularization based SAR image enhancement. Science China: Information Sciences. 2019, 62(4): 049303: 1-3.

[8] Hui Bi, Jianguo Liu, Bingchen Zhang, and Wen Hong. Baseline distribution optimization and missing data completion in wavelet-based CS-TomoSAR. Science China: Information Sciences. 2018, 61(4): 042302:1-9.

[9] Hui Bi, Bingchen Zhang, XiaoXiang Zhu, and Wen Hong. Azimuth-range decouple based L1 regularization method for wide ScanSAR imaging via extended chirp scaling. Journal of Applied Remote Sensing. 2017, 11(1): 015007:1-12.

[10] Hui Bi, Bingchen Zhang, Zhengdao Wang, and Wen Hong. Lq regularization-based synthetic aperture radar image feature enhancement via iterative thresholding algorithm. Electronics Letters. 2016, 52(15): 1336-1338.

[11] Hui Bi, Bingchen Zhang, and Wen Hong. Lq regularization-based unobserved baselines' data estimation method for tomographic SAR inversion. Journal of Applied Remote Sensing. 2016, 10(3): 035014:1-10.

[12] Hui Bi, Bingchen Zhang, Wen Hong, and Shengli Zhou. Matrix completion based airborne tomographic SAR inversion under missing data. IEEE Geoscience and Remote Sensing Letters. 2015, 12(10): 2346-2350.

[13] Hui Bi, Chenglong Jiang, Bingchen Zhang, Zhengdao Wang, and Wen Hong. Radar change imaging with undersampled data based on matrix completion and Bayesian compressive sensing. IEEE Geoscience and Remote Sensing Letters. 2015, 12(7): 1546-1550.

[14] Hui Bi, Bingchen Zhang, and Wen Hong. Matrix completion-based distributed compressive sensing for polarimetric SAR tomography. Science China: Information Sciences. 2015, 58(10): 119301:1-3.

[15] 毕辉, 张冰尘, 洪文. 基于RIPless理论的层析SAR成像航迹分布优化方法. 航空学报. 2016, 37(2): 680-687.

[16] 毕辉, 蒋成龙，王万影，张冰尘, 洪文. 层析合成孔径雷达成像航迹分布优化方法. 系统工程与电子技术. 2015, 37(7): 1788-1792.

[17] Zhilin Xu, Bingchen Zhang, Hui Bi, Chenyang Wu, and Zhonghao Wei. Comparison of raw data based and complex image based sparse SAR imaging methods. Sensors, 2019, 19: 320:1-12.

[18] Chenyang Wu, Zhonghao Wei, Hui Bi, Bingchen Zhang, Yun Lin, and Wen Hong. InSAR imaging based on L1 regularization joint reconstruction via complex approximated message passing. Electronics Letters. 2018, 54(4): 237-239.

[19] 赵克祥, 毕辉, 张冰尘. 基于快速阈值迭代算法的SAR层析成像处理方法. 系统工程与电子技术. 2017, 39(5): 1019-1023.

[20] Zhonghao Wei, Chenglong Jiang, Bingchen Zhang, Hui Bi, Wen Hong, and Yirong Wu. WASAR imaging with backprojection based group complex approximate message passing. Electronics Letters. 2016, 52(23): 1590-1592.

[21] 田野, 毕辉, 张冰尘, 洪文. 相变图在稀疏微波成像变化检测降采样分析中的应用. 电子与信息学报. 2015, 37(9): 2335-2341.

[22] 张冰尘, 王万影, 毕辉, 洪文. 基于压缩多信号分类算法的森林区域极化SAR 层析成像. 电子与信息学报. 2015, 37(3): 625-630.

(二) 会议论文

[23] Hui Bi and Guoan Bi. Performance analysis of iterative soft thresholding algorithm for L1 regularization based sparse SAR imaging. IEEE Radar Conference: Revolutions in Radar, pp. 1-6, Boston, USA, April 22-26, 2019.

[24] Hui Bi, Guoan Bi, Lu Wang, Xiumei Li, and Xianpeng Wang. Airborne FMCW SAR sparse imaging: Initial results. The 23rd International Conference on Digital Signal Processing (DSP), pp: 1-5, Shanghai, China, November 19-21, 2018.

[25] Hui Bi, Guoan Bi, Bngchen Zhang, and Wen Hong. A novel iterative thresholding algorithm for complex image based sparse SAR imaging. 12th European Conference on Synthetic Aperture Radar (EUSAR), pp: 1-5, Aachen, Germany, June 4-7, 2018.

[26] Hui Bi, Bingchen Zhang, XiaoXiang Zhu, and Wen Hong. Lq regularization method for spaceborne SCANSAR and TOPS SAR imaging. 11th European Conference on Synthetic Aperture Radar (EUSAR), pp: 1-4, Hamburg, Germany, June 6-9, 2016.

[27] Hui Bi, Bingchen Zhang, XiaoXiang Zhu, Wen Hong, and Yirong Wu. CFAR detection for the complex approximated message passing reconstructed SAR image. 4th International Workshop on Compressed Sensing Theory and its Applications to Radar, Sonar, and Remote Sensing (CoSeRa), pp: 133-137, Aachen, Germany, September 19-22, 2016.

[28] Zhilin Xu, Bingchen Zhang, Hui Bi, Chenyang Wu, Zhonghao Wei, and Yirong Wu. Comparison of raw data based and complex image based sparse SAR imaging methods. 5th International Workshop on Compressed Sensing Theory and its Applications to Radar,

Sonar, and Remote Sensing (CoSeRa), pp: 1-5, Siegen, Germany, September 10-13, 2018.

[29] Chenyang Wu, Hui Bi, Bingchen Zhang, Yun Lin, and Wen Hong. L1 regularization recovered SAR images based interferometric SAR imaging via complex approximated message passing. Proceeding SPIE: Image and Signal Processing for Remote Sensing, pp: 1-5, Warsaw, Poland, September 11-14, 2017.

[30] Zhonghao Wei, Bingchen Zhang, Hui Bi, Yun Lin, and Yirong Wu. Group sparsity based airborne wide angle SAR imaging. Proceeding SPIE: Image and Signal Processing for Remote Sensing, 10041V, Edinburgh, United Kingdom, October 18, 2016.

[31] Shuguang He, Lei Pang, Xuedong Zhang, Hui Liu, Hui Bi, Liping Ai, Mengxin Sun, and Yong Wang. SAR tomography imaging based on generalized orthogonal mathing pursuit-- the case study of Pangu 7 star hotel in Beijing. IEEE International Geoscience and Remote Sensing Symposium (IGARSS), pp: 6665-6668, Beijing, China, July 10-15, 2016.

[32] Zhe Zhang, Bingchen Zhang, Wen Hong, Hui Bi, and Yirong Wu. SAR Imaging of moving target in a sparse scene based on sparse constraints: preliminary experiment results. IEEE International Geoscience and Remote Sensing Symposium (IGARSS), pp: 2844-2847, Milan, Italy, July 26-31, 2015.

[33] WanyingWang, Bingchen Zhang,Wen Hong, and Hui Bi. Polarimetric SAR tomography of forested areas based on compressive music," IEEE International Geoscience and Remote Sensing Symposium (IGARSS), pp. 1-5, Quebec City, Canada, July 13-18, 2014.

(三) 参与编写专著

[34] 参与编写中文专著《稀疏微波成像导论》，作者：吴一戎，洪文，张冰尘

[35] 参与编写中文专著《稀疏微波成像应用》，作者：张冰尘，洪文，吴一戎

◇ 科研成果获奖及专利：

(一) 科研获奖

[1] 2018年，获得中国图象图形学学会优秀博士学位论文奖

[2] 2018年，入选南京航空航天大学“长空学者”人才计划

[3] 2017年，获得中国科学院院长奖

[4] 2016年，获得博士研究生国家奖学金

(二) 发明专利

1. 授权专利

[1] 毕辉, 魏中浩，张冰尘，洪文，吴一戎. 一种适用于恒虚警率检测的稀疏微波成像算法. 专利授权号：ZL201610659853.5

[2] 毕辉, 蒋成龙，王万影，张冰尘，洪文. 一种基于相关系数的层析SAR成像的航迹分布优化方法. 专利授权号：ZL201410436308.0

[3] 张冰尘, 麦超云, 孙进平, 毕辉, 洪文. 一种基于稀疏频率的雷达通信波形设计方法. 专利授权号：ZL201510152988.8

[4] 赵曜，毕辉，张冰尘. 获得稀疏微波成像相变图的方法. 专利授权号：ZL201410225128.8

[5] 张冰尘, 王万影, 毕辉, 蒋成龙, 洪文. 基于压缩多信号分类的层析合成孔径雷达树高测量方法. 专利授权号：ZL201410202897.6

[6] 张冰尘，洪文, 毕辉, 利用压缩感知算法处理神经spike信号的方法. 专利授权号：ZL201310421300.2

2. 受理专利

[7] 张冰尘, 魏中浩, 毕辉, 吴一戎. 合成孔径雷达稀疏成像方法. 专利受理号：201610384461.2

[8] 张冰尘, 王欢, 孙进平, 洪文, 蒋成龙, 毕辉. 基于稀疏表示的多传感器航迹融合. 专利受理号：201610196780.0

[9] 洪文, 张群, 陈怡君, 罗迎, 张冰尘, 蒋成龙，毕辉. 变PRF条件下雷达目标微动特征提取方法. 专利受理号：201610217515.6

[10] 庞蕾, 刘慧, 张学东, 陈洋, 何曙光, 毕辉, 王勇, 艾立萍, 孙萌鑫, 李林泽, 王志良. 一种基于分段弱正交匹配追踪的层析SAR三维成像方法. 专利受理号：201611239581.X

[11] 张学东, 庞蕾, 刘慧, 何曙光, 毕辉, 艾立萍, 孙萌鑫, 李林泽, 王志良. 基于广义正交匹配追踪的层析SAR三维点云生成方法.专利受理号：201611199283.2

◇ 承担的科研项目情况：

[1] 南京航空航天大学科研启动基金，1004-YAH19009，基于稀疏信号处理的合成孔径雷达成像技术研究，2018/12-2020/11，10万元，在研，主持

[2] 国家基础研究计划（973计划），2010CB731900，稀疏微波成像的理论，体制和方法研究， 2010/01-2014/01，3300万元，结题，参加

[3] 中国科学院/国家外专局重点项目创新团队国际合作伙伴计划，先进微波探测与信息处理，2013/01-2017/01，400万，结题，参加

[4] 863计划，***海洋***感知***，2015/09-2016/07，50万，结题，参加

◇ 指导研究生情况：

◇ **备注：**

欢迎有志于投身雷达信号处理、微波图像处理相关领域研究的同学报考

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