



师资队伍

两院院士

杰出人才

博士生导师

硕士生导师

教授

副教授

博士生导师

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张海霞

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• 基本信息

姓名： 张海霞

性别： 女

民族： 汉族

出生年月：

学历： 博士

职称： 教授



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学科一: 智能通信与网络

学科二: 模式识别与智能系统

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研究方向: 智能通信与网络, 通信大数据处理及应用, 通信信号处理, 通信网络资源管理与优化, 数据处理, 机器学习

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人才计划:

国家优秀青年科学基金获得者

泰山学者特聘专家

山东省杰出青年基金获得者

教育部“新世纪优秀人才”

主要科研奖励:

2018, IEEE ICNC2018最佳论文奖

2017, 山东省科学技术奖 (自然科学类) 二等奖, 第一完成人

2016, IEEE Smart Data2016最佳论文奖

2016, 山东省具有突出贡献的中青年专家

2014, 山东省科学技术奖 (科技进步奖) 一等奖, 第三完成人

2014, 信息论青年新星

2014, 第七届齐鲁巾帼发明家优秀奖

2012, 山东省科学技术奖 (自然科学类) 二等奖, 第一完成人

2011, IEEE ICCT2011最佳论文奖

• 个人简介

工作经历:

2011.08-至今 山东大学 教授

2016.08-2017.08 佛罗里达大学 访问教授

2009.03-2011.07 山东大学信息科学与工程学院 副教授

2006.08-2008.10 德国慕尼黑工业大学 研究助理

研究领域:

智能通信与网络, 通信大数据处理及应用, 通信信号处理, 通信网络资源管理与优化, 数据处理, 机器学习等

承担项目:

总计主持国家及省部级项目十余项, 参与国家及省部级十余项。

作为负责人承担的部分项目:

1. “超密集异构网络中的干扰管理与资源优化”, **国家优秀青年科学基金项目**, 2017.01-2019.12, 130万, **项目负责人**

2. “MIMO干扰网络中面向干扰和资源管理的有限字符预编码研究”, **国家自然科学基金面上项目**, 2014.01-2017.12, 80万, **项目负责**

人

3. “网络通信理论与技术”, **山东省杰出青年基金**, 2013.10-2016.10, 50万, **项目负责人**

4. “基于宽带多媒体处理及自然交互技术的节能高画质数字电视SoC芯片关键技术开发”, **山东省自主创新专项**, 2013.01-2016.06, 150万, **项目负责人**

5. “认知无线电系统中功率控制算法的研究”，**国家自然科学基金面上项目**，2010.01-2012.12，33万，**项目负责人**
6. “基于频能联合优化理论的绿色通信系统”，**新世纪优秀人才支持计划**，2011.10-2015.04，50万，**项目负责人**
7. “认知协同通信中联合预编码和功率分配研究”，**山东省自然科学基金重点项目**，2011.07-2014.10，12万，**项目负责人**

作为主要参与者（前三位）承担的部分项目：

1. “第五代移动通信系统关键技术研究”，**国家国际科技合作专项**，2014.04-2017.04，190万元，**技术负责人**
2. “多用户MIMO无线通信系统中预编码处理算法的研究”，**国家自然科学基金面上项目**，2009.01-2011.12，35万，**第二位**
3. “干扰受限的协作无线网络中联合资源调度的分布式优化理论研究”，**国家自然科学基金青年项目**，2012.01-2014.12，28万，**第二位**
4. “硬件受限的大规模天线能效建模、优化和传输理论研究”，**国家自然科学基金面上项目**，2017.01-2020.12，63万，**第三位**
5. “IMT-Advanced多址技术研发”，**国家科技重大专项**，2010.01-2011.12，33万，**第三位**
6. “非同分布衰落MIMO系统空时处理技术研究”，**移动通信国家重点实验室开放基金**，2011.09-2013.08，6万，**第三位**
7. “基于多源信息融合的开放智能交通服务”，**山东省自主创新重大专项**，2014.03-2016.12，36万，**第三位**

学术论文：

总计发表学术论文132篇，其中SCI收录39篇，EI收录111篇。

部分期刊论文：

[1] Jingping Qiao,**Haixia Zhang***, Feng Zhao, et al. Secure Transmission and Self-Energy Recycling for Wireless-Powered Relay Systems with Partial Eavesdropper CSI[J].**IEEE Journal on Selected Areas in Communications**, 2018.(**SCI/EI**)

[2] Guannan Dong,**Haixia Zhang***, Dongfeng Yuan. Downlink Achievable Rate of Massive MIMO Enabled SWIPT Systems over Rician Channels[J].**IEEE Communications Letters**, 2017, PP(99):1-1.(**SCI/EI**)

[3] Jie Tian,**Haixia Zhang***, Dalei Wu, et al. QoS-Constrained Medium Access Probability Optimization in Wireless Interference-Limited Networks[J].**IEEE Transactions on Communications**, 2017, PP(99):1-1.(**SCI/EI**)

[4] Jingping Qiao,**Haixia Zhang***, Xiaotian Zhou, et al. Joint Beamforming and Time Switching Design for Secrecy Rate Maximization in Wireless-Powered FD Relay Systems[J].**IEEE Transactions on Vehicular Technology**, 2017, PP(99):1-1.(**SCI/EI**)

[5] Yi Cao,**Haixia Zhang***, Dalei Wu, et al. OGCMAC: A Novel OFDM based Group Contention MAC for VANET Control Channel[J].**IEEE Transactions on Wireless Communications**, 2017, PP(99):1-1.(**SCI/EI**)

[6] Yi Cao,**Haixia Zhang***, Xiaotian Zhou, et al. A Scalable and Cooperative MAC Protocol for Control Channel Access in VANETs[J].**IEEE Access**, 2017, 5(99):9682-9690.(**SCI/EI**)

- [7] Shuaishuai Guo, **Haixia Zhang***, Peng Zhang, et al. Generalized 3-D Constellation Design for Spatial Modulation[J]. **IEEE Transactions on Communications**, 2017, PP(99):1-1. **(SCI/EI)**
- [8] Shuaishuai Guo, **Haixia Zhang***, Peng Zhang, et al. Adaptive Mapper Design for Spatial Modulation with Lightweight Feedback Overhead[J]. **IEEE Transactions on Vehicular Technology**, 2017, PP(99):1-1. **(SCI/EI)**
- [9] **Haixia Zhang***, Anming Dong, Shi Jin, et al. Joint Transceiver and Power Splitting Optimization for Multiuser MIMO SWIPT under MSE QoS Constraints[J]. **IEEE Transactions on Vehicular Technology**, 2017, PP(99):1-1. **(SCI/EI)**
- [10] You Zhou, **Haixia Zhang***, Dongfeng Yuan, et al. Differential Spatial Modulation With BPSK for Two-Way Relay Wireless Communications[J]. **IEEE Communications Letters**, 2017, 21(6):1361-1364. **(SCI/EI)**
- [11] Shenghao Xu, **Haixia Zhang***, Jie Tian, et al. Pilot reuse and power control of D2D underlaying massive MIMO systems for energy efficiency optimization[J]. **Science China Information Sciences**, 2017, 60(10):100303. **(SCI/EI)**
- [12] Anming Dong, **Haixia Zhang***, Xiaotian Zhou, et al. On Analytical Achievable Rate for MIMO Linear Interference Alignment with Imperfect CSI[J]. **Wireless Personal Communications**, 2016:1-26. **(SCI/EI)**
- [13] Shuaishuai Guo, **Haixia Zhang***, Shi Jin, et al. Spatial Modulation via 3-D Mapping[J]. **IEEE Communications Letters**, 2016, 20(6):1096-1099. **(SCI/EI)**
- [14] Shuaishuai Guo, **Haixia Zhang***, Zhang P, et al. Link-Adaptive Mapper Designs for Space-Shift-Keying-Modulated MIMO Systems[J]. **IEEE Transactions on Vehicular Technology**, 2016, 65(10):8087-8100. **(SCI/EI)**
- [15] Jie Tian, **Haixia Zhang***, Dalei Wu, et al. Interference-Aware Cross-Layer Design for Distributed Video Transmission in Wireless Networks[J]. **IEEE Transactions on Circuits & Systems for Video Technology**, 2016, 26(5):978-991. **(SCI/EI)**
- [16] Li Fan, Shi Jin, Chao-Kai Wen, **Haixia Zhang**. Uplink Achievable Rate for Massive MIMO Systems With Low-Resolution ADC[J]. **IEEE Communications Letters**, 2015, 19(12):2186-2189. **(SCI/EI)**
- [17] Anming Dong, **Haixia Zhang***, Dongfeng Yuan, et al. Interference Alignment Transceiver Design by Minimizing the Maximum Mean Square Error for MIMO Interfering Broadcast Channel[J]. **IEEE Transactions on Vehicular Technology**, 2016, 65(8):6024-6037. **(SCI/EI)**
- [18] Jian Sun, Fudong Li, **Haixia, Zhang** et al. An Open Access 4x4 MIMO Testbed and its Validation with an IEEE802.11n WLAN System[J]. **China Communications**, 2014(s1). **(SCI)**
- [19] Jia Zhang, Dongfeng Yuan, **Haixia Zhang**. Joint and Distributed Scheduling with Dynamic Power Control in Multicell Orthogonal Frequency Division Multiple Access Networks[J]. **IET Communications**, 2013, 7(17):1938-1947. **(SCI)**
- [20] Zhangyu Guan, Dongfeng Yuan, **Haixia Zhang**, et al. Cooperative bargaining solution for efficient and fair spectrum management in cognitive wireless networks[J]. **International Journal of Communication Systems**, 2015, 27(11):3441-3459. **(SCI/EI)**

[21] Peng Zhang, Dongfeng Yuan, **Haixia Zhang** and Xiaotian Zhou. Enhanced Closed-loop EOSTBC Schemes for Multiple Transmit Antennas[J]. **Transactions on Emerging Telecommunications Technologies**, 2013, 24(2): 133–141. (SCI/EI)

[22] Kai Zhao, **Haixia Zhang***, Dongfeng Yuan and Feng Zhao. Power Allocation Scheme Based on Sum Capacity Maximization for Signal-to-leakage-and-noise ratio Precoded Multiuser Multiple-input Single-output Downlink[J]. **Wireless Communications and Mobile Computing**, 2013, 15(4):685-698. (SCI/EI)

[23] **Haixia Zhang***, Yanbo Ma, Dongfeng Yuan and Hsiao-Hwa Chen. Quality-of-Service Driven Power and Sub-Carrier Allocation Policy for Vehicular Communication Networks[J]. **IEEE Journal on Selected Areas in Communications**, 2011, 29(1):197-206. (SCI/EI)

部分会议论文:

[1] Shenghao Xu, **Haixia Zhang***, Jie Tian, Dalei Wuyy, and Dongfeng Yuan. Pilot Length Optimization for Spectral and Energy Efficient D2D Communications Underlay Massive MIMO Networks[C]//**International Conference on Computing, Networking and Communication**. IEEE, 2018:1-6.

[2] Hui Ding, **Haixia Zhang***, Jie Tian, Shenghao Xu, and Dongfeng Yuan. Energy Efficient User Association and Power Control for Dense Heterogeneous Networks[C]//**International Conference on Computing, Networking and Communication**. IEEE, 2018:1-6.

[3] Tiantian Ma, **Haixia Zhang***, Shuaishuai Guo, Shenghao Xu, and Dongfeng Yuan. Low-Complexity Energy-Efficient Mode Selection and Resource Management for D2D Communications[C]//**IEEE International Conference on Computer and Communications**. IEEE, 2017:1-5.

[4] Tiantian Li, **Haixia Zhang***, Jie Tian and Shuaishuai Guo. QoE-Driven Centralized Scheduling for HTTP Adaptive Video Streaming Transmission over Wireless Networks[C]//**International Conference on Wireless Communications and Signal Processing**. IEEE, 2017:1-5.

[5] Shenghao Xu, **Haixia Zhang***, Jie Tian, et al. Distributed energy-efficient resource allocation and power control for device-to-device communications underlying cellular networks[C]//**International Symposium on Wireless Personal Multimedia Communications**. IEEE, 2017.

[6] Shuaishuai Guo, **Haixia Zhang***, Ying Wang, et al. Spatial Modulated Simultaneous Wireless Information and Power Transfer[C]//**Global Communications Conference**. IEEE, 2017:1-6.

[7] Anming Dong, **Haixia Zhang***, Dalei Wu and Dongfeng Yuan. QoS-Constrained Transceiver Design and Power Splitting for Downlink Multiuser MIMO SWIPT Systems[C]//**International Conference on Communications**. IEEE, 2016:1-6.

[8] Guannan Dong, Xiaotian Zhou, **Haixia Zhang***, et al. Linear Programming Based Pilot Allocation in TDD Massive Multiple-Input Multiple-Output Systems[C]//**Vehicular Technology Conference**. IEEE, 2016:1-5.

- [9] Jianhua Liu, Yueheng Li, **Haixia Zhang***, et al. Pilot Contamination Precoding Assisted Sum Rate Maximization for Multi-cell Massive MIMO Systems[C]//**Smart Antennas. VDE**, 2016.
- [10] Peng Zhang, Chengduan Wang, Shuaishuai Guo, **Haixia Zhang**. Novel APM Constellation Design for Spatial Modulation System[C]//**International Wireless Communication and Signal Processing**. IEEE, 2015:1-5.
- [11] Anming Dong, **Haixia Zhang***, Dalei Wu, et al. Logarithmic Expectation of the Sum of Exponential Random Variables for Wireless Communication Performance Evaluation[C]//**Vehicular Technology Conference**. IEEE, 2016:1-5.
- [12] Bin Sun, Zhi Liu, Yulin Sun, Lijun Cao and **Haixia Zhang**. Multiple Objects Tracking and Identification Based on Sparse Representation in Surveillance Video[C]//**IEEE International Conference on Multimedia Big Data**. IEEE Computer Society, 2015:268-271.
- [13] Xiting Han, **Haixia Zhang***, Dalei Wu, et al. Fairness-based pilot allocation in multi-cell massive MIMO systems[C]//**International Conference on Wireless Communications & Signal Processing**. IEEE, 2015:1-5.
- [14] Liyun Zhang, **Haixia Zhang***, Dalei Wu, et al. Improving Physical Layer Security for MISO Systems via Using Artificial Noise[C]//**Global Communications Conference**. IEEE, 2016:1-6.
- [15] Jingping Qiao, **Haixia Zhang***, Dalei Wu, et al. Secrecy rate analysis for jamming assisted relay communications systems[C]//**IEEE International Conference on Acoustics, Speech and Signal Processing**. IEEE, 2015:3143-3147.
- [16] Qingyu Zhai, Dongfeng Yuan, **Haixia Zhang**, et al. Parallelization of OBL based PSO K-means algorithm using OpenCL architecture[C]//**International Conference on Natural Computation**. IEEE, 2014:714-719.
- [17] You Zhou, Dongfeng Yuan, Xiaotian Zhou and **Haixia Zhang**. Trellis Coded Generalized Spatial Modulation[C]//**Vehicular Technology Conference**. IEEE, 2015:1-5.
- [18] Shuaishuai Guo, **Haixia Zhang***, Jia Zhang, et al. On the mutual information and constellation design criterion of spatial modulation MIMO systems[C]//**IEEE International Conference on Communication Systems**. IEEE, 2014:487-491.
- [19] Shuaishuai Guo, **Haixia Zhang***, Dongfeng Yuan, et al. A novel interference alignment scheme for two-cell MIMO downlink channels[C]//**International Conf on Ubiquitous & Future Networks**. IEEE, 2014:371-375.
- [20] Lili Sun, **Haixia Zhang***, Dongmei Jiang. Coefficients optimization in femtocell utility function for distributed utility-based SINR adaption algorithm[C]//**International Conf on Ubiquitous and Future Networks**. IEEE, 2014:233-237.
- [21] S. Guo, H. Zhang, P. Zhang, P. Zhao, L. Wang and M. Alouini, "Generalized Beamspace Modulation Using Multiplexing: A Breakthrough in mmWave MIMO," in IEEE Journal on Selected Areas in Communications, vol. 37, no. 9, pp. 2014-2028, Sept. 2019. doi: 10.1109/JSAC.2019.2929399
- [22] S. Guo, H. Zhang, P. Zhang, P. Zhao, L. Wang and M. Alouini, "Generalized Beamspace Modulation using Multiplexing for mmWave MIMO," ICC 2019 - 2019 IEEE International Conference on Communications (ICC), Shanghai, China, 2019, pp. 1-7. doi:

10.1109/ICC.2019.8762020

[23] S. Guo, H. Zhang, P. Zhang, S. Dang, C. Liang and M. Alouini, "Signal Shaping for Generalized Spatial Modulation and Generalized Quadrature Spatial Modulation," in IEEE Transactions on Wireless Communications, vol. 18, no. 8, pp. 4047-4059, Aug. 2019. doi: 10.1109/TWC.2019.2920822

授权专利:

授权国家发明专利25件, 其中1件已转化实施。

代表性专利:

[1] 张海霞, 韩希婷, 周晓天, 郭帅帅, 董冠男, 一种基于用户位置信息的大规模MIMO系统导频分配方法, 2017.11.14, 中国, ZL201410705005.4

[2] 张海霞, 孙彬, 刘治, 尚蕾, 金蕾, 一种通过降低分辨率预测高清图像编码单元CU的划分方式的方法及其实现装置, 2017.11.14, 中国, ZL201410405983.7

[3] 张海霞, 王杰庆, 李培岭, 贺颖颖, 一种油田防火预警系统及其判定火灾级别的方法, 2017.3.1, 中国, ZL201410420870.4

[4] 张海霞, 于莉, 袁东风, 徐加利, 林慧琳, 李宗璋, 孙志猛, 马翠云, 杨千里, 王宏宾, 一种针对Android系统的基于内容分组的浏览器页面加载方法, 2016.11.30, 中国, ZL201210445282.7

[5] 张海霞, 潘婷婷, 李宗璋, 陈硕, 张子瑾, 孙志猛, 于莉, 王君君, 一种基于DEEC方法的异构无线传感器网络分簇方法, 2016.06.01, 中国, ZL201310188422.1

[6] 张海霞, 李宗璋, 潘婷婷, 陈硕, 曹琦, 孙志猛, 于莉, 徐伟涛, 一种用于移动设备的输入事件按需派发方法, 2016.04.06, 中国, ZL201210428281.1

[7] 张海霞, 李宗璋, 潘婷婷, 孙志猛, 王君君, 于莉, 基于文件操作的瘦客户端桌面排列方法及系统, 2015.12.02, 中国, ZL201210427532.4

[8] 张海霞, 高凯, 袁东风, 徐加利, 徐祥桐, 孙文, 翟庆羽, 纪洪亮, 孙志猛, 王宏宾, 一种通过多缓冲机制提升安卓系统性能的方法, 2015.10.2, 中国, ZL201210444839.5

[9] 张海霞, 孙文, 袁东风, 徐加利, 徐祥桐, 翟庆羽, 孙志猛, 王宏斌, 纪洪亮, 李宗璋, 一种通过在单进程中实现多消息队列机制提升性能的方法, 2015.05.27, 中国, ZL201210445839.7

[10] 张海霞, 王宏宾, 袁东风, 徐加利, 马翠云, 冯骁, 孙志猛, 孙文, 纪洪亮, 杨刚震, 林慧琳, 一种通过触点动态采样技术降低嵌入式系统功耗的方法, 2015.04.22, 中国, ZL201210444861.X

[11] 张海霞, 颜廷芝, 党飞, 薛良飞, 王君君, 冯新建, 一种基于嵌入式终端的在线流媒体服务方法, 2014.07.30, 中国, ZL201110448021.6

[12] 张海霞, 王君君, 薛良飞, 一种基于瘦客户端的文件分布式存储的运行方法, 2014.04.16, 中国, ZL201110448040.9

教学情况:

教学成果:

山东大学研究生教育教学成果奖, 2009

教授课程:

1. 《通信原理》, 本科, 2011-2016
2. 《空时信号处理》, 研究生, 2012-2015

指导研究生:

1. 指导博士研究生: 13人
2. 指导硕士研究生: 40人

学术兼职:

IEEE高级会员, 中国电子学会高级会员, 中国通信学会青年委员, 中国电子学会教育工作委员会青年委员、信息论分会委员

国际期刊编辑:

1. 2009-至今, International Journal of Computer Systems

会议组织:

1. **TPC Co-chair**, The fourth International Workshop on Cross-Layer Design, 2013
2. **Co-chair**, ChinaCom (Symposium on Information and Coding Theory), 2013
3. **Co-chair**, IEEE 13th ICCT (Special session on Cross-Layer Design in Wireless Networks), 2011
4. **Publicity chair**, The 2nd International Conference on Ubiquitous Context-Awareness and Wireless Sensor Network (UCAWSN-13), 2013
5. **Publicity Chair**, The 8th FTRA International Conference on Future Information Technology, 2013
6. **Co-chair**, Symposium "Information and Coding Theory" for Chinacom, 2013
7. **Leading Co-Chair**, special session on Cross-layer design for the 13th IEEE international conference on communication Technology, 2011
8. **Keynote Speaker**, International Conference on Advanced Infocomm Technology (ICAIT' 09), 2009
9. **Session Chair**, the 13th IEEE international conference on communication Technology (ICCT' 11), 2011
10. **Session Chair**, the 9th IEEE International Symposium on Communications and Information Technology (ISCI' 09), 2009

11. **Session Chair**, the International Conference on Advanced Infocomm Technology (ICAIT' 09), 2009

国际学术会议技术委员会(TPC)成员

1. IEEE International Conference on Communications 2017
2. IEEE International Conference on Computing, Networking and Communications, 2017
3. IEEE International Conference on Computing, Networking and Communications, 2016
4. IEEE Global Communications Conference, 2015
5. IEEE Asia Pacific Conference on Wireless and Mobile, 2014
6. IEEE International Conference on Communication, Networks and Satellite, 2014
7. The 2nd International Conference of Information and Communication Technology, 2014
8. International Conference on Computing, Networking and Communications, 2014,
9. IEEE International Conference on Computing, Networking and Communications, 2013
10. TPC member for the 8th International Conference on Body Area Networks, 2013
11. IEEE Symposium on Wireless Technology and Applications, 2013
12. The 19th Asia-Pacific Conference on Communications, 2013

研究生招生:

主要研究方向为智能通信与网络, 通信大数据处理及应用, 通信信号处理, 通信网络资源管理与优化, 数据处理, 机器学习等, 承担多项省部级科研课题, 在包括IEEE Journal on Selected Areas in Communications, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Vehicular Technology, IEEE Communications Letters等国际著名期刊和IEEE国际学术会议上发表学术论文一百余篇 (SCI收录四十余篇), 出版学术著作4部, 已获得21项国家发明专利授权。科研成果先后获得教育部提名国家科学技术奖 (自然科学奖) 二等奖1项、山东省科技进步奖一等奖1项、山东省自然科学奖二等奖3项、山东省高校科研成果奖一等奖2项、2010年山东省优秀博士论文奖、国际会议IEEE ICCT' 2011、IEEE ICCT' 2012、IEEE Smart Data' 2016最佳论文奖等各类学术奖励10余项。欢迎有志于智能通信与网络、通信信号处理、通信大数据处理及应用等信息技术研究的同学报考硕士及博士研究生。

上一条: 常发亮

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