

Time	Level-2 Regency 1	Level-2 Regency 2	Level-2 Regency 3	Level-3 Events 1	Level-3 Events 3	Level-3 Events 6
Sunday, August 11						
09:00 am-10:30 am	TUT-01: <i>Communication Networks Design: Model-Based, AI-Driven, or Both?</i>	TUT-02: <i>Cellular Internet of UAVs for 5G and Beyond</i>	TUT-03: <i>Millimeter-Wave Communication: Advances and New Trends</i>	WS1: <i>Integration of 5G and Non-Terrestrial Networks</i>	WS2: <i>5G Meets AI/ML & Edge Computing</i>	WS3: <i>Ambient Backscatter Communications for Energy- and Spectrum-Efficient IoT Networks</i>
11:00 am-12:30 pm	TUT-01: <i>Communication Networks Design: Model-Based, AI-Driven, or Both?</i>	TUT-02: <i>Cellular Internet of UAVs for 5G and Beyond</i>	TUT-03: <i>Millimeter-Wave Communication: Advances and New Trends</i>	WS4: <i>Integration of 5G and Non-Terrestrial Networks</i>	WS5: <i>Advanced Technologies in Wireless Power Transfer and Communication Networks</i>	WS6: <i>Terahertz Band Communication Networks (TBCN)</i>
02:00 pm-03:30 pm	TUT-04: <i>Internet of Vehicles: when Edge Computing and Learning Meet Intelligent Transport</i>	TUT-05: <i>Hybrid Beamforming for 5G Millimeter-Wave Systems</i>	TUT-06: <i>Quantum Communications</i>	WS7: <i>5G-Health & Molecular and Multiscale Communications</i>	WS8: <i>Advanced Technologies in Wireless Power Transfer and Communication Networks & Connecting All Things for Enabling Smart Cities</i>	WS9: <i>Internet of Things & Network Edge Intelligence</i>
04:00 pm-05:30 pm	TUT-04: <i>Internet of Vehicles: when Edge Computing and Learning Meet Intelligent Transport</i>	TUT-05: <i>Hybrid Beamforming for 5G Millimeter-Wave Systems</i>	TUT-06: <i>Quantum Communications</i>			

Sunday, August 11 9:00 - 10:30

TUT-01: Communication Networks Design: Model-Based, AI-Driven, or Both?

Room: level-2 Regency 1

TUT-02: Cellular Internet of UAVs for 5G and Beyond

Room: level-2 Regency 2

TUT-03: Millimeter-Wave Communication: Advances and New Trends

Room: level-2 Regency 3

WS1: Integration of 5G and Non-Terrestrial Networks

Room: level-3 Events 1

Chair: Tingting Zhang (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China)

SN-VNE: A Virtual Network Embedding Algorithm for Satellite Networks

Jiang Liu, Xiaochun He, Tianjiao Chen, Xinghui Wang, Ruizhi Luo and Tao Huang (Beijing University of Posts and Telecommunications, P.R. China)

Relay Buffer Assisted DTN Bundle Protocol Design via Network Coding

Yunlai Xu (Harbin Institute of Technology(Shenzhen) & Pengcheng Laboratory, P.R. China); Shushi Gu (Harbin Institute of Technology, Shenzhen, P.R. China); Zhihua Yang (Harbin Institute of Technology, P.R. China); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China)

The Laser Communication and Aiming Antenna Research for Micro-nano Satellite

Zhang Yiqun (Research Center of Networks and Communications, Peng Cheng Laboratory & Changchun University of Science and Technology, P.R. China); Zhang Lizhong and Meng Lixin (Changchun University of Science and Technology, P.R. China)

Sparse pilot matrix design for uplink grant-free SCMA system

Quan Yuan (Harbin Institute of Technology, P.R. China); ZhenYong Wang (Harbin Institute of Technology & Shenzhen Academy of Aerospace Technology, P.R. China); Xuanyi Zhang (Beijing Capital International Airport CO., Ltd, P.R. China); Ci He (Science and Technology on Communication Networks Laboratory, P.R. China); Wei Cai (HIT Zheng Yuan Information Technology Co., Ltd, P.R. China)

WS2: 5G Meets AI/ML & Edge Computing

Room: level-3 Events 3

Chair: Celimuge Wu (The University of Electro-Communications, Japan)

A Mobile Edge Computing Server Deployment Scheme in Wireless Mesh Network

Wenxiao Shi, Liqiu Zhai, Min Ouyang and Jiadong Zhang (Jilin University, P.R. China)

A RNN Decoder for Channel Decoding under Correlated Noise

Xiangxiang Zhang and Tao Luo (Beijing University of Posts and Telecommunications, P.R. China)

SMDP-Based Resource Allocation for Slice Requests with Long-term Reward Maximization

Xinli Zhou, Xiangming Wen and Luhan Wang (Beijing University of Posts and Telecommunications, P.R. China); Zhaoming Lu (BUPT, P.R. China); Wanqing Guan (Beijing University of Posts and Telecommunications, P.R. China)

Deep Reinforcement Learning for D2D transmission in unlicensed bands

Zhiqun Zou (Zhejiang University, P.R. China); Rui Yin (Zhejiang University City, P.R. China & KwaZulu-Natal University, South Africa); Xianfu Chen (VTT Technical Research Centre of Finland, Finland); Celimuge Wu (The University of Electro-Communications, Japan)

Spectrum usage model for smart spectrum

Kenta Umebayashi (Tokyo University of Agriculture and Technology, Japan)

WS3: Ambient Backscatter Communications for Energy- and Spectrum-Efficient IoT Networks



Room: level-3 Events 6

Chair: Shimin Gong (Sun Yat-sen University, P.R. China)

Capacity for Correlated MIMO Backscatter Systems

Yihao Li and Caijun Zhong (Zhejiang University, P.R. China)

Design and Analysis of a PMOS RF-DC Conversion Circuit at UHF for Ambient Energy Harvesting

Zihao Xiang, Shiyang Han, Bo Liu and Huyang Peng (Nankai University, P.R. China); Zixiong Wang (Tianjin University, P.R. China); Guiling Sun (Nankai University, P.R. China)

Backscatter-Assisted Computation Offloading for Energy Harvesting IoT Devices via Policy-based Deep Reinforcement Learning

Yutong Xie (Shenzhen Institutes of Advanced Technology, P.R. China); Zhengzhuo Xu, Yuxing Zhong and Jing Xu (Huazhong University of Science and Technology, P.R. China); Shimin Gong (Sun Yat-sen University, P.R. China); Yi Wang (Southern University of Science and Technology, P.R. China)

A Semi-Blind Receiver for Ambient Backscatter Communications with MPSK RF Source

Youyou Zhang (UESTC, P.R. China); Qianqian Zhang and Ying-Chang Liang (University of Electronic Science and Technology of China, P.R. China); Pooi-Yuen Kam (National University of Singapore, Singapore)

Signal Detection for Batteryless Backscatter Systems with Multiple-Antenna Tags

Guanjie Hu, Yue Zhu and Wenjing Zhao (Beijing Jiaotong University, P.R. China); Minzheng Jia (Beijing Polytechnic College, P.R. China); Bagus Juliyanto and Yul Yunazwin Nazaruddin (Bandung Institute of Technology, Indonesia)

Sunday, August 11 11:00 - 12:30

TUT-01: Communication Networks Design: Model-Based, AI-Driven, or Both?

Room: level-2 Regency 1

TUT-02: Cellular Internet of UAVs for 5G and Beyond

Room: level-2 Regency 2

TUT-03: Millimeter-Wave Communication: Advances and New Trends

Room: level-2 Regency 3

WS4: Integration of 5G and Non-Terrestrial Networks

Room: level-3 Events 1

A novel spinal codes based on chaotic Kent mapping

Pengcheng Shi (Harbin Institute of Technology, P.R. China); ZhenYong Wang (Harbin Institute of Technology & Shenzhen Academy of Aerospace Technology, P.R. China); Ci He (Science and Technology on Communication Networks Laboratory, P.R. China); Xuanyi Zhang (Beijing Capital International Airport CO., Ltd, P.R. China); Wei Cai (HIT Zheng Yuan Information Technology Co., Ltd, P.R. China)

Dynamic Pilot Design and Channel Estimation Based on Structured Compressive Sensing for Uplink SCMA System

Shan Guo and Wei Wu (Harbin Institute of Technology, P.R. China); Xuanli Wu (Communication Research Center, Harbin Institute of Technology, P.R. China); Xu Chen (Harbin Institute of Technology, P.R. China); Tingting Zhang (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China)

Relative Localization of Ground Vehicles Using Non-Terrestrial Networks

Yuanpeng Liu (Tsinghua University, P.R. China); Wenxuan Li (Beijing University of Posts and Telecommunications, P.R. China); Qianxi Lu (OPPO Standards Research Center, P.R. China); Jian Wang and Yuan Shen (Tsinghua University, P.R. China)

Resource Allocation in UAV-aided Vehicle Localization Frameworks

Zhaojie Wu and Wangfei Quan (Harbin Institute of Technology, Shenzhen, P.R. China); Tingting Zhang (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China)

Timely and Full Coverage Algorithm for Region Area with UAVs-assisted Small Satellite Constellation

Peng Yuan (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Min Su (Harbin Institute of Technology, Shen Zhen, P.R. China); Yue Li (Harbin Institute of Technology, Shenzhen, P.R. China); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China)

WS5: Advanced Technologies in Wireless Power Transfer and Communication Networks

Room: level-3 Events 3

Chair: Yubin Zhao (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China)

Performance Analysis for Hybrid AF Relaying Protocol in SWIPT Systems with Direct Link

Yingting Liu, Ruyi Xiao, Jianmei Shen and Hongwu Yang (Northwest Normal University, P.R. China); Chun-man Yan (Xidian University & Institute of Intelligent Control and Image Engineering, P.R. China)

Outage Performance Analysis for a DF Based Hybrid Scheme over Log-normal Fading Channels

Yingting Liu, Zhengwei Pan, Jianmei Shen and Hongwu Yang (Northwest Normal University, P.R. China); Chun-man Yan (Xidian University & Institute of Intelligent Control and Image Engineering, P.R. China)

Switched rely and Optional Source of Magnetic Coupling Resonant Wireless Transfer System

Hu Huanyan and Ji Yuefeng (Beijing University of Posts and Telecommunications, P.R. China); Yubin Zhao (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China); Jiawei Zhang (Beijing University of Posts & Telecommunication, P.R. China); Junjian Huang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China)

Space Propagation Model for Wireless Power Transfer System of Dual Transmitter

Junjian Huang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China); Hongyu Zhang (Beijing University of Posts and Telecommunications, P.R. China); Faying He (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China); Hu Huanyan (Beijing University of Posts and Telecommunications, P.R. China)

Performance analysis of dual-hop AF relaying networks over log-normal fading channels with interferences

Yingting Liu, Jianmei Shen, Zhengwei Pan, Ruyi Xiao and Hongwu Yang (Northwest Normal University, P.R. China); Chun-man Yan (Xidian University & Institute of Intelligent Control and Image Engineering, P.R. China)

WS6: Terahertz Band Communication Networks (TBCN)

Room: level-3 Events 6

Chair: Chong Han (Shanghai Jiao Tong University, P.R. China)

Neural Network Enhanced Analog Beam Selection Scheme for Terahertz Systems

Zhuoxun Li and Xinying Ma (University of Electronic Science and Technology of China, P.R. China); Wenjie Chen (University Of Electronic Science And Technology Of China, P.R. China); Ningyuan Kuang and Bo Zhang (University of Electronic Science and Technology of China, P.R. China)

Modulator Design for THz Communication Based on Vanadium Dioxide Metasurface

Yaojia Chi, Ningyuan Kuang and Yahua Tang (University of Electronic Science and Technology of China, P.R. China); Wenjie Chen (University Of Electronic Science And Technology Of China, P.R. China); Xinying Ma, Zhuoxun Li, Qiye Wen and Zhi Chen (University of Electronic Science and Technology of China, P.R. China)

Interference and Coverage Analysis for Indoor THz Communications with Beamforming Antennas

Xin-Wei Yao, Chao-Chao Wang and Chu-Feng Qi (Zhejiang University of Technology, P.R. China)

Sum-rate Maximization for Intelligent Reflecting Surface Based Terahertz Communication Systems

Wenjie Chen (University Of Electronic Science And Technology Of China, P.R. China); Xinying Ma, Zhuoxun Li and Ningyuan Kuang (University of Electronic Science and Technology of China, P.R. China)

Multi-Beam On-Demand Power Allocation MAC Protocol for MIMO Terahertz Communication Networks

Xin-Wei Yao, Fang-Zhou Ni and Chao-Chao Wang (Zhejiang University of Technology, P.R. China)

Sunday, August 11 2:00 - 3:30

TUT-04: Internet of Vehicles: when Edge Computing and Learning Meet Intelligent Transport



Room: level-2 Regency 1

TUT-05: Hybrid Beamforming for 5G Millimeter-Wave Systems

Room: level-2 Regency 2

TUT-06: Quantum Communications

Room: level-2 Regency 3

WS7: 5G-Health & Molecular and Multiscale Communications

Room: level-3 Events 1

Siamese Feature Pyramid Network for Visual Tracking

Shuo Chang, Fan Zhang and Sai Huang (Beijing University of Posts and Telecommunications, P.R. China); Yuanyuan Yao (Beijing Information Science & Technology University, P.R. China); Xiaotong Zhao (Beijing University of Posts and Telecom, P.R. China); Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China)

A Lattice-Based SCMA Codebook Design for IoMT Communications

Xuewan Zhang (University of Zhengzhou, P.R. China); Gangtao Han and Dalong Zhang (Zhengzhou University, P.R. China); Liuqing Yang (Colorado State University, USA)

Initial Distance Estimation for Diffusive Mobile Molecular Communication Systems

Shuai Huang and Lin Lin (Tongji University, P.R. China); Weisi Guo (University of Warwick, United Kingdom (Great Britain)); Hao Yan (Shanghai Jiao Tong University, P.R. China); Juan Xu and Fuqiang Liu (Tongji University, P.R. China)

Decision-making Strategy of Channel Switching in Molecular Communication Networks

Peng He (Chongqing University of Posts and Telecommunications, P.R. China); Bowen Pi and Qiang Liu (University of Electronic Science and Technology of China, P.R. China)

Target Detection Scheme Based on Chemotaxis in Two-hop Relay Nano-network

Liting Yang and Xin Ge (University of Electronic Science and Technology of China, P.R. China); Kun Yang (University of Essex, United Kingdom (Great Britain)); Tadashi Nakano (Osaka University, Japan); Yifan Chen (University of Waikato & University of Electronic Science and Technology of China, New Zealand); Qiang Liu (University of Electronic Science and Technology of China, P.R. China)

Channel Aggregation in Molecular Communication Network Based on Calcium Signal

Bowen Pi (University of Electronic Science and Technology of China, P.R. China); Peng He (Chongqing University of Posts and Telecommunications, P.R. China); Kun Yang (University of Essex, United Kingdom (Great Britain)); Qiang Liu (University of Electronic Science and Technology of China, P.R. China)

WS8: Advanced Technologies in Wireless Power Transfer and Communication Networks & Connecting All Things for Enabling Smart Cities

Room: level-3 Events 3

Chair: Hongjian Sun (Durham University, United Kingdom (Great Britain))

Information Reverse Transmission Method for Bidirectional WPT with Dual Active Bridges

Jie Wu, Kai Feng, Nan Jin, Zhenjun Wu and Shuaibiao He (Zhengzhou University of Light Industry, P.R. China); Xin Liu and Dianguang Ma (Shanghai Jiao Tong University, P.R. China)

A Novel Conception of SWIPT System Considering Information Independent Transmission

Han Kong, Kai Feng, Jie Wu, Nan Jin and Shuaibiao He (Zhengzhou University of Light Industry, P.R. China); Jiagui Tao (State Grid JiangSu Electric Power Co. LTD., P.R. China)

Real-Time Price Elasticity Reinforcement Learning for Low Carbon Energy Hub Scheduling Based on Conditional Random Field

Weiqi Hua (Durham University, United Kingdom (Great Britain)); Minglei You (Loughborough University, United Kingdom (Great Britain)); Hongjian Sun (Durham University, United Kingdom (Great Britain))

Energy-efficient and Low Package Loss Clustering in UAV-assisted WSN using Kmeans++ and Fuzzy Logic

Mi Jinlong, Xiangming Wen and Chunlei Sun (Beijing University of Posts and Telecommunications, P.R. China); Zhaoming Lu (BUPT, P.R. China); Wenpeng Jing (Beijing University of Posts and Telecommunications, P.R. China)

Smart Scheduling of Household Appliances to Decarbonise Domestic Energy Consumption

Kitty Stacpoole and Hongjian Sun (Durham University, United Kingdom (Great Britain)); Jing Jiang (Northumbria University, United Kingdom (Great Britain))

Deep Long Short-term Memory (LSTM) Network with Sliding-window Approach in Urban Thermal Analysis

Ling Li, Sida Dai and Zhiwei Cao (Jilin University, P.R. China)

WS9: Internet of Things & Network Edge Intelligence

Room: level-3 Events 6

Chair: Qinghe Du (Xi'an Jiaotong University, P.R. China)

Research on wireless sensor network location based on Improve Pigeon-inspired optimization

Li Peng (School of Electronic Information Engineering, Changchun University of Science and Technology, P.R. China); Chen Gui Fen (Teacher, P.R. China)

Application of Agent in Security Platform

Shucun Zhu, Haijun Gu, Xin Miao, Meiqi Liu, Haoyu Liu and Yin Cui (Jilin University, P.R. China)

IoT Data Management and Lineage Traceability: A Blockchain-based Solution

Hongyan Cui (Beijing University of Posts and Telecommunications, P.R. China); Zunming Chen (Beijing University of Posts and Telecommunications & State Key Lab. of Networking and Switching Technology, P.R. China); YU XI, Hao Chen and Jiawang Hao (Beijing University of Posts and Telecommunications, P.R. China)

Optimization of URLLC and eMBB Multiplexing via Deep Reinforcement Learning

Yang Li (Beijing University of Posts and Telecommunications); Chunjing Hu (Beijing University of Posts and Telecommunications (BUPT), P.R. China); Jun Wang and Mingfeng Xu (Beijing University of Posts and Telecommunications, P.R. China)

Computation Offloading Strategy in D2D-assisted Cellular Networks with Mobile Edge Computing

Junxu Hou and Xiaoxiang Wang (Beijing University of Posts and Telecommunications, P.R. China); Dongyu Wang (Beijing University of Posts and Telecommunications & Key Laboratory of Universal Wireless Communications, Ministry of Education, P.R. China); Yanwen Lan and Zhaolin Liu (Beijing University of Posts and Telecommunications, P.R. China)

An improved Adaptive BeamForming Algorithm for 5G Interference-coexistence communication

Chao Li and Siye Wang (Beijing University of Posts and Telecommunications, P.R. China)

Sunday, August 11 4:00 - 5:30

TUT-04: Internet of Vehicles: when Edge Computing and Learning Meet Intelligent Transport



Room: level-2 Regency 1

TUT-05: Hybrid Beamforming for 5G Millimeter-Wave Systems

Room: level-2 Regency 2

TUT-06: Quantum Communications

Room: level-2 Regency 3