Program for VTC2018-Spring Workshop HMWC'18

**Time:** 8:30-17:00  3 June, 2018  
**Room:** Douro Sul  
Note: Each paper will be allocated 20 minutes in total, and it is suggested to use 15 minutes for presentation and 5 minutes for Q&A.

**Session I: High Mobility Vehicular Communications (08:30-10:00)**

**Session Chair:** Yan Shi, Beijing University of Posts and Telecommunications

1. The Performance Comparison of LTE-V2X and IEEE 802.11p  
   Li ZHAO, China Academy of Telecommunication Technology (CATT); Fang Jiayi, State Key Laboratory of Wireless Mobile Communications; Yuanyuan LI, China Academy of Telecommunication Technology (CATT); Lin LIN, China Academy of Telecommunication Technology (CATT); Chenxin LI, China Academy of Telecommunication Technology (CATT); Jinling Hu, China Academy of Telecommunication Technology; Yan Shi, Beijing University of Posts and Telecommunications

2. An Improved Coordinated Multichannel MAC Scheme by Efficient Use of Idle Service Channels for VANETs  
   Yongfu Ma, Liu Yang, Pingzhi Fan, Sangsha Fang, Yi Hu, Southwest Jiaotong University

3. Cooperative Downloading in Vehicular Networks: A Graph-based Approach  
   Yanglong Sun, Le Xu, Tang Yuliang, Xiamen University

4. Dynamic Virtual Resource Allocation in 5G Vehicular Communication Networks with Mixed SCMA/OFDMA  
   Liu Huifang, Southwest Jiaotong University; Gang Liu, Southwest Jiaotong University; Zheng Ma, Southwest Jiaotong University; Youhua Tang, Southwest Jiaotong University; Yuan Lin, Comsol AB

**Morning Break (10:00 - 10:30)**

**Keynote Speech (10:30-11:30)**

Title: Channel characteristics for cooperative vehicular communication and positioning  
Speaker: Professor Fredrik Tufvesson (IEEE Fellow), Lund University, Sweden  
**Chair:** Pingzhi Fan, Southwest Jiaotong University

Abstract:

In this talk, we discuss channel characteristics of wireless vehicular channels and how those affect the possibilities to perform cooperative communication and radio based positioning based on already available wireless signals. We review vehicular channel properties, and look at how cellular 5G trends will affect the possibility of performing radio based positioning. We discuss multilink behaviour and the influence of shadowing from other vehicles. We also consider detailed scatterer behaviour and discuss the possibility for multipath assisted positioning. Finally, we wrap up by summarizing different channel modelling approaches for the cooperative vehicular channel and their suitability with respect to positioning.
Biography of Prof. Fredrik Tufvesson:
Fredrik Tufvesson received his Ph.D. in 2000 from Lund University in Sweden. After two years at a startup company, he joined the department of Electrical and Information Technology at Lund University, where he is now professor of radio systems. His main research interests is the interplay between the radio channel and the rest of the communication system with various applications in 5G systems such as massive MIMO, mm wave communication, vehicular communication and radio based positioning. Fredrik has authored around 65 journal papers and 130 conference papers, he is fellow of the IEEE and recently he got the Neal Shepherd Memorial Award for the best propagation paper in IEEE Transactions on Vehicular Technology.

Lunch Time (12:00-13:30)

Session II: High Mobility Channel Characteristics and PHY Design (13:30-15:00)
Session Chair: Yu Liu, Shandong University
1. 3D Non-Stationary GBSMs for High-Speed Train Tunnel Channels
   Yu LIU, Shandong University; Liu Feng, Southwest Jiaotong University; Jian Sun, Shandong University; Wensheng Zhang, Shandong University; Cheng-Xiang Wang, Heriot-Watt University; Pingzhi Fan, Southwest Jiaotong University
2. Blind Channel Estimation Technique for OFDM Systems over Time Varying Channels
   Lina Bariah, Khalifa University of Science and Technology; Arafat Al-Dweik, University of Western Ontario; Sami Muhaidat, University of Surrey
3. Channel Estimation for High Speed Macro-MIMO RRH LTE-R Systems in LOS and NLOS Environments
   Xin Zhao, Fudan university; Xiaocheng Jin, Datang Wireless Mobile Innovation Center; Xiaolin Zhou, Fudan University; Bing Xu, Datang Wireless Mobile Innovation Center
4. Space-Frequency Shift Keying in Rapidly Time-Varying MIMO OFDM Channels
   Zhenzhou Li, Jianping Zheng, Xidian University

Afternoon Break (15:00-15:30)
Session III: High Mobility Transmission Schemes (15:30-17:00)
Session Chair: Gang Liu, Southwest Jiaotong University
1. MIMO-OFDM-IM System for High Mobility Communications with Block Markov Superposition Transmission
   Shengxiao Chen, Xiao Ma, Sun Yat-sen University
2. Design and Performance of the Polar Coded Modulation for High Mobility Communications
   Peiyao Chen, B. Bai, Xidian University
3. Location-Fair Beamforming for High Speed Railway Communication Systems
   Ximei Liu, Deli Qiao, East China Normal University
4. Resource Allocation in Non-Orthogonal Random Access for M2M Communications
   Jin Bai, Ying Li, Xudong Guo, Xidian University