Seminar Announcement

NOV. 22, Wednesday, 10:00-11:30AM, Room 国家光电实验室A302

Title: Secure Wireless Communications
with Full-Duplex Radio

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Abstract

Billions of people around the world are interconnected via wireless devices for our daily lives and business transactions. Privacy and security have become a top concern as wireless networks are prone to eavesdroppers due to shared physical medium. The physical layer security on top of cryptography is essential to mitigate this concern. The technology of full-duplex radio that is able to transmit and receive at the same time and same frequency is uniquely equiped to ensure a high level of information security. A full-duplex radio is able to jam (although briefly as necessary) all potential eavesdroppers as it receives a secret key from another radio. In this talk, I will present some of the latest developments in understanding the limits and potentials of full-duplex radio in secure wireless communications. In particular, I will highlight a number of fundemantal properties of full-duplex radio for secure wireless communications without the knowledge of channel state information of eavesdroppers. Both cases of colluding and non-colluding eavesdroppers are considered.

Biography

Yingbo Hua is a senior full professor with the University of California, Riverside, where he joined in 2001. Prior to that, he held a faculty position with the University of Melbourne, Australia, from 1990 to 2000. He received his Ph.D. degree from Syracuse Unversity in 1988. Professor Hua has published hundreds of articles in the fields of signal processing, wireless communications and sensor networks, including a dozen on full-duplex radio technology. He was elected to IEEE Fellow in 2001 and AAAS Fellow in 2011. He is currently a Senior Area Editor for IEEE Transactions on Signal Processing, a Steering Committee Member for IEEE Wireless Communications Letters, and an Associate Editor for IEEE Transactions on Signal and Information Processing over Networks.