Interference Management in Wireless Systems

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Abstract: We elaborated on a new interference alignment technique for downlink multi-user system in a MIMOX channel with multiple antennas. We considered two transmitters, each equipped with $M$ antennas, and $K$ users, each equipped with $N$ antennas. Here, we consider a MIMO-X scenario that some users are receiving transmissions from both transmitters. The proposed approach is focused on mixed-rank signal transmission to each user while each transmitter only needs to know the channel state information for its serving users and each user only needs to know its corresponding channels to the transmitters. Simulation results are provided to compare the performance of the proposed scheme with that of the existing results in the literature.

Bio: Dr. Amin Mobasher is a Member of Technical staff in the Advanced Technology Lab in Research In Motion (RIM) Limited. He received his B.Sc. and M.Sc. degrees in electrical engineering from Sharif University of Technology (SUT), Tehran, Iran, in 2000 and 2002, respectively. He earned his Ph.D. degree in electrical and computer engineering from University of Waterloo, Waterloo, ON, Canada in Dec. 2007. From Jan. 2008 till Jan. 2009, he was working as a Member of Technical Staff in the Advanced Technology Lab in Research In Motion (RIM) Limited on LTE and LTE-A 3GPP standards. In 2009, he was with Smart Antenna Research Group (SARG) in Stanford University as a Visiting Scholar/Post-doc. His research interests are MIMO-OFDM systems, Interference Mitigation, Relays, Network Coding, Optimization in Communication Systems, and physical layer in 3GPP LTE and LTE-A standards. He has more than 25 referred journal and conference papers. He served as the editor of "Fourth-Generation Wireless Networks: Applications and Innovations" book. He is the recipient of several awards including Ontario Graduate Scholarship and University of Waterloo Presidential Award in 2006. He also received an NSERC Industrial R&D Fellowship and an NSERC post-doctoral Fellowship in 2007 and 2008, respectively.

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Invited by: Prof. Shahab Ardalan