Energy-efficient Power Control for MIMO channels with partial and full CSI

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Blue Room
Istituto TeCIP
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Abstract:
In a multiple-input-multiple-output (MIMO) downlink channel, the impact of line-of-sight, out-of-cell interferers and of antenna correlation on the energy efficiency (EE) of the communication is discussed. With reference to a power budget model reflecting the power expenditure of a base station (BS) together with the power employed for training, we provide analytical insights for power control policies either designed in the presence of full channel state information (CSI) availability at the transmitter or under the assumption that power allocation does not adapt to channel state dynamically.

Dr. Giusi Alfano:
Giusi Alfano was born in Naples, Italy, on March 22, 1978. She received Laurea degree in Communication Engineering from University of Naples Federico II, Italy, in 2001. From 2002 to 2004 she was involved in radar and satellite signal processing studies at National Research Council and University of Naples. Since April 2004 to October 2007 she has been Ph.D student in information engineering at University of Benevento, Italy. She is currently holding a post-doc position at Politecnico di Torino, Italy. Her research work lies mainly in the field of random matrix theory applications to MIMO wireless communications and sensor networks, and to the characterization of physical layers of random networks.