

Experimental Work

Responsible Postgraduate Student: Vasileios D. Papoutsis

Title: "Fairness-aware resource allocation for the MISO downlink over frequency-selective channels"

Scope: The problem of subcarrier allocation and beamforming for the downlink of wireless systems operating over a frequency-selective channel is investigated. It is assumed that the Base Station uses many antennas, whereas a single antenna is available to each user. A suboptimal, but efficient algorithm is devised that is based on zero-forcing beamforming. The algorithm maximizes the sum of the users' data rates subject to the predetermined proportional rate constraints and total available power. It is shown the relation between the sum data rate of the users of the system and the antennas of the BS, how data rate changes by adding more users to the system and the loss with respect to the unconstrained case where the only target is the maximization of the sum rate.