Quantized Antenna Combining for Multiuser MIMO-OFDM with Limited Feedback

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Abstract:
A method for reducing feedback in a downlink Multiuser MIMO-OFDM cellular system, with zero forcing beamforming at the base (BS) and antenna combining at each mobile (MS) is proposed. The method consists of partitioning the subcarriers into groups, choosing the quantized channel vector that better represents each group in terms of average quantization error. Numerical results show that savings up to 93% in overhead bits are obtained for SNR equal to 15 dB, with reductions in channel capacity that goes from 30% to 50% depending on the codebook size used for quantization.

Referencia: