عنوان مقاله:
Optimal Power Allocation for Random Beamforming

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خلاصه مقاله:
Random beamforming has long been used for down-link scheduling in MIMO broadcast systems as a method that show optimal scaling law of sum-rate when the number of users in system is large [1]. Unfortunately, this scheme degrades when the number of users in system is small. In this paper, a simple iterative power allocation algorithm for random beamforming is proposed. The proposed power allocation algorithm is based on feedback information in two stages. In the first stage, transmitter determines a group of best users among all users using an equal power random beamforming algorithm. In the second stage, the transmitter receives the gains of the best selected channels in the first stage, over all beams. Based on the second stage feedback information, the proposed algorithm maximizes the sum-rate with respect to the beams powers. Simulation results show that significant improvement on sum-rate can be achieved using the proposed power allocation strategy, when the number of users in system is not large.

کلمات کلیدی:
Broadcast channel, Dirty paper coding, Random beamforming, Power allocation