

Transmit Power Optimization for Cooperative Beamforming in Reverse-Link MIMO Ad-Hoc Networks

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Abstract : In the Ad-hoc network, the great interests regarding MIMO scheme leads to their combination, which is also utilized into its applicable network. We manage the field of the problem into Reverse-link MIMO Ad-hoc Network (RMAN) and propose the methodology to maximize the data rate with its power consumption using Node-Cooperative beamforming technique. Based on the result of mathematical optimization formulation, we design the algorithm to construct optimal orthogonal weight vector according to channel feedback and control its transmission power according to QoS-pricing value level. In simulation results, we show the validity of the proposed mathematical optimization result and algorithm which mean that the sum-rate of each link is converged into some point.

Keywords : ad-hoc network, MIMO, cooperative beamforming, transmit power

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