Co-channel Interference analysis of MIMO channel

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Abstract:
In this paper, we evaluate the information theoretic capacity of multiple-input, multiple output (MIMO) communication systems with the present of interference in an analytical way. We fix the total interference power to noise ratio and evaluate the MIMO performance with various assumptions about the CSI and interference channel knowledge at the transmitter side. We also examine the MIMO capacity behaviours in terms of numbers of interferers, antennas size and interference power. In the end we exploit the interference channel spatial characters and extend to the case of LTE-A by considering a model of the interference model.