

Downlink SINR distribution of linearly precoded multiuser MIMO systems[†]

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Abstract

This paper derives mathematical expressions for the SINR distribution in systems with linearly precoded multiuser MIMO and frequency domain packet scheduling. The packet scheduler is able to exploit the available multiuser diversity in both time, frequency and spatial domains. Our analysis model is confined with 3GPP downlink transmission in which we specifically investigate the Single User (SU) and Multi-user (MU) Spatial Division Multiplexing (SDM) MIMO schemes. From the analytical results we find that the outage probability for systems using the SU-MIMO scheme is larger than the one for the MU-MIMO scheme. Also, in comparison to systems without precoding, linear precoding can improve the outage probability.

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