

DESIGN OF HIGH RATE AND LOW COMPLEXITY MIMO TRANSMISSION CHANNEL

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Abstract

The high-rate, low complexity MIMO transmission scheme, called STBC-SM, as an alternative to existing techniques such as SM and VBLAST. The proposed new transmission scheme employs both APM techniques and antenna indices to convey information and exploits the transmit diversity potential of MIMO channels. A general technique has been presented for the construction of the STBC-SM scheme for any number of transmit antennas in which the STBC-SM system was optimized by deriving its diversity and coding gains to reach optimum performance. The STBC-SM offers significant improvements in BER performance compared to SM and V-BLAST systems.

Keywords : Maximum likelihood decoding, MIMO systems, space-time block codes/coding, spatial modulation.