

Application of Hypergeometric series in the Spatial Modulation system

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Abstract

Spatial modulation (SM) is a recent multiple -input multiple -output (MIMO) transmission scheme that attracted significant research. It also offers an additional spatial dimension like antenna index, which can be utilized for data transmission via both signal space and spatial dimension. An antenna switch enables multiple antennas to share a common radio Frequency (RF) chain. In this paper, a closed-form solution is derived based on the hypergeometric series to get the instantaneous maximum mutual information for a 2×1 antenna configuration. With help of simulations, the average bit error rate (ABER) of SM is analyzed in presence and absence of channel estimation errors.

Keywords: Closed form, Mutual Information, Spatial Modulation, Hypergeometric series

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