

Uplink received signal's moments based on a geometric model

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Abstract

The scatterers' locations are modeled as a two-dimensional heterogeneous Poisson spatial point process with a Gaussian intensity and assume an idealized geometric relationships among the mobile transmitter, the base-station's receiving antennas, and the scatterers of the channel. Firstly we derive the uplink received signal's fourth-order spatial-correlation coefficient function across a receiving sensor-array's aperture. Secondly, we derive an upper bound for the output power of two-sensor branch-selection reception. The derived coefficient function and upper bound are explicit in terms of the geometric model parameters. The results are verified by Monte Carlo simulations.