Statistical Analysis of MIMO Scheme under Nakagami Fading Channels

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***Abstract*— Node isolation is one of the fundamental metrics in the design consideration and evaluation of wireless ad hoc network. This paper is aimed to introduce a statistical framework for the computing of the isolation probability of a randomly chosen node in a wireless network. The statistical framework is proposed in the context of lognormal shadowing on Nakagami fading for multiple inputs multiple output schemes. In this work, the focus is on path loss component, network topology, node density and performance of a node. The performance of connectivity between nodes in a dense network is analyzed by deriving analytical models. Analysis of experimental results indicate that they are useful in estimating connectivity issues and implementing more secure wireless ad hoc networks.**

***Keyword*— Nakagami fading, Multiple Input Multiple Output, Isolated Node, Deterministic channel, lognormal shadowing.**

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