## Probability analysis of isolated node in wireless ad-hoc sensor network with border effect

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Abstract—With the growing importance of wireless ad hoc networks (particularly, in applications such as wireless local area networks, and ad hoc sensor networks), it is important to develop an understanding of the isolated node in this network with border effect. It is a challenging task owing to the fact that such analysis must take into account the interactions between the wireless physical layer, radio propagation and multiple accesses. In this research, major issues in the probability analysis of isolated node in wireless ad hoc sensor networks with border effect are discussed. Connectivity is one of the important features of wireless sensor network. The nodes are said to be connected in a network if their deterministic distance is less than transmission radius. Additionally, the associated topics like fading and capacity scaling in different channels are surveyed. The results are obtained using MATLAB communication tool for different values of node density, number of nodes for different channels and comparison of these channels is done.

## Keyword—Ad-Hoc network, Frame Reception Rate, Deterministic channel, Rayleigh fading, lognormal shadowing



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