

The Application of Lognormal Mixture Shadowing Model for B2B Channels

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Abstract

In this article, a Lognormal mixture shadowing model based on a cluster concept is utilized in the modeling of body-to-body (B2B) channels for different running and cycling activities. The mixture model addresses the inaccuracies observed using a unimodal distribution that may not accurately represent the measurement dataset. Parameters of the mixture model are estimated using the expectation-maximization (EM) algorithm. The accuracy of the proposed mixture model is compared to other commonly utilized unimodal distributions showing significant improvement in representing the empirical dataset. The measured data, as well as the developed model, can be used for accurate planning and deployments of wireless B2B networks for use in various sporting and other related activities.