

Jordan University of Science and Technology

Outage Probability for End User Mobile in Cognitive Relay Networks Over Mixed Fading Channels

Authors: Lama N. Ibrahim, Mahmoud A. Khodeir, and Mamoun F. Al-Mistarihi

Abstract: In this paper, an upper bound expression of the outage probability (OP) under interference power constraint is derived for cognitive amplify-and-forward (AF) relay network with best relay selection (BRS) scheme. In the proposed model, the destination moves at high speed, more than 100km/h and the channels that connected with destination are modeled as Nakagami-m fading channels, $m > 1$ whereas the other communication links are modeled by Rayleigh distribution. Analytical results are presented to evaluate the impact of the number of secondary relays, primary user (PU) location, and the severity parameter m on the performance of the cognitive relay network. Analytical results show that the Nakagami- m fading model can more accurately model conditions in vehicular environment.