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On the Outage Probability in Cognitive Amplify-and-Forward Relaying Systems over Mixed Fading Channels for End User Mobile

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Abstract: In this paper, closed form outage probability is derived for cognitive amplify-and-forward (AF) relaying system in a spectrum sharing environment for a moving end mobile users. The end users can move at high vehicular speeds which cause dynamic multipath fading and a high Doppler shift. The transmit power of the secondary network is governed by the maximum interference power that the primary network's receiver can tolerate. In the proposed model, the channel between relay to destination is modeled as Nakagami- m fading channel that is most suitable for modeling channel fading at high mobility scenarios whereas the other communication links are modeled by Rayleigh distribution. The impact of the PU location on the OP performance is studied also