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SER Analysis of QPSK Modulated Physical Layer Network Coding for system-level simulation

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Abstract—System-level simulation has been widely used recently to evaluate the performance of wireless networks. In this paper we consider the simulation of a dense, multi-hop wireless network which applies Physical Layer Network Coding (PNC), as developed in the DIWINE project. The DIWINE system-level simulator calculates the packet error probability (PER) at the relay against the signal and noise power. The above PER could be deduced from the relay's symbol error rate (SER). Here we analyse the SER of QPSK modulated Physical Layer Network Coding for the case where two source signals are received at one relay, since this forms a building block of many typical networks.

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