Coding Assisted Carrier Recovery in Nakagami-m Channels using Digital Phase Locked Loop

Abstract

Bit Error Rate (BER) performance of the modified structure of a Digital Phase Locked Loop (DPLL) based system for dealing with Nakagami-m fading with coded and un-coded channel is presented here. The emphasis of the work is the implementation of Bose, Chaudhuri and Hocquenghem (BCH) channel coding and decoding technique. The performance of the DPLL for carrier reception with signal under certain modulation transmitted through Nakagami-m channels is compared with coded and un-coded conditions. The results of simulation of the proposed DPLL with Nakagami-m fading and QPSK modulation shows that the performance of the system improves significantly upon application of BCH channel coding.
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References


Index Terms

Computer Science Wireless Communications

Keywords

Digital Phase Locked Loop; Bch Channel Coding; Nakagami–m Fading Channels; Least Square Polynomial Fitting Filter