

Adaptive Noncoherent Receivers for MC-CDMA Communications

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Abstract— In this paper, we propose differential phase-shift keying (DPSK) noncoherent receivers for multicarrier code division multiple access (MC-CDMA) systems in multipath channels. The noncoherent receivers are composed of a linear equalizer and a decision-feedback differential detector to detect DPSK signals. The performances of the proposed noncoherent receivers can be improved by increasing the number of feedback symbols. For an infinite number of feedback symbols, the performances of the proposed noncoherent receivers approaches that of the conventional coherent receiver. Some simulation examples are given to show the system performances of the four proposed receivers.

Keyword—MC-CDMA, DF-DD, noncoherent receiver



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