Study in the joint inmpact of FBC and CFO in the performance of an asynchronous MC-CDMA system

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ABSTRACT

The factor of CFO (carrier frequency offset) definitely degrades the final results of system performance evaluation for an asynchronous MC-CDMA (multi-carrier coded-division multiple-access) system is one of the most frequently discussed issues in every kind of assuming situations. However, the other one important parameter of FBC (fading branch correlation) is much rare for implying in the study of MC-CDMA system, since they are almost considered as independent each other for the reason of algebra simplification. The issue of exploring aggregately to the matter of which parameter, CFO or FBC, is mainly dominating the system performance of an MC-CDMA system would like to be studied in this paper. The calculation of system performance with BER (bit error rate) for an MC-CDMA system is by simultaneously taking CFO and FBC, which are symbolized as and , respectively, into account for the investigation in this paper. On the basis of adopting the same quantity to the serve of simulation, that is, values of and are equally assigned to for the CFO and FBC, respectively. Moreover, some formulas which function both of the CFO and FBC parameters are provided to this investigation. The simulation results from the evaluation of an MC-CDMA system are illustrated with the CFO and FBC at the same graph for the purpose of comparison.

Keywords : BER (bit error rate)、CFO (carrier frequency offset)、FBC (fading branch correlation)、MC-CDMA system

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