

MMSEC-PIC for MC-CDMA downlink in multicell environments

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Abstract: Multi-carrier code division multiple access (MC-CDMA) systems have been considered as a potential candidate for future mobile radio systems. Within this scenario, the interference originating from neighboring cells, called intercell interference, is one of the reasons for limiting the performance improvement in multicell environments. There have been many detection techniques proposed to reduce the intracell interference. Unfortunately, the mitigation of intercell interference in MC-CDMA cellular systems is still far from desired level. This paper proposes an MMSEC-PIC receiver for MC-CDMA downlink in multicell environments. The simulation results show that the proposed scheme outperforms conventional receivers in multicell fading environments.

Author Keywords: Intercell interference; MC-CDMA; MMSE equalization; PIC

Index Keywords: Computer simulation; Interference suppression; Mobile radio systems; Multicarrier modulation; Radio interference; Signal receivers; Intercell interference; MMSE equalization; Multi carrier code division multiple access (MC-CDMA); PIC; Code division multiple access

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