

## MMSE-Based Beamforming for Chip Interleaved CDMA in Aeronautical Mobile Radio Channel

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**Abstract :** This paper addresses the performance of antenna array beam-forming on Chip-Interleaved Code Division Multiple Access (CI-CDMA) system based on Minimum Mean Square Error (MMSE) detector in aeronautical mobile radio channel. Multipath fading, Doppler shifts caused by the speed of the aircraft, and Multiple Access Interference (MAI) are the most important reasons that affect and reduce the performance of aeronautical system. In this paper, we suggested the CI-CDMA with antenna array to combat this fading and improve the bit error rate (BER) performance. We further evaluate the performance of the proposed system in the four standard scenarios in aeronautical mobile radio channel.

**Keywords :** aeronautical channel, CI-CDMA, beamforming, communication, information

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