

Application of Gaussian and Raised-Cosine Beam formers in CDMA Wireless Systems

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ABSTRACT

This thesis utilizes Gaussian and Raised-Cosine window to shape the beam pattern of an antenna array CDMA communication system. We explore the performance improvement by the two beam patterns. Moreover, the performance, in terms of bit energy to interference power ratio (E_b/I_0), is comprehensively compared with the conventional phase weighting scheme. We find that the intra-cellular reduction factor decreases as the number of antenna elements increases. The inter-cellular interference increase factor increases in accordance with array size in phase weighting scheme, where as it is independent of array size in both the Gaussian and Raised-Cosine weighting schemes. As a whole, we find that both the Gaussian and Raise-Cosine weighting schemes outperform the phase weighting scheme and the Raise-Cosine weighting scheme is slightly better than the Gaussian weighting scheme.

Keywords : CDMA、phase weight、Raised-Cosine window weight、Gaussian window weight、intra-cellular reduction factor、inter-cellular interference increase factor.

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