Abstracts

Effects of carrier tracking in RAKE reception of wide-band DSSS in Rician fading

R.E. Ziemer, B.R. Vojcic, L.B. Milstein and J.G. Proakis. "Effects of carrier tracking in RAKE reception of wide-band DSSS in Rician fading." 1999 Transactions on Microwave Theory and Techniques 47.6 (Jun. 1999, Part I [T-MTT]): 681-686.

An analysis is given of the effect of phase tracking error in the fingers of a coherent RAKE receiver. Results for constant and exponentially decaying power delay profiles indicate that, for sufficiently low tracking loop signal-to-noise ratio, a point is eventually reached where performance does not improve with the use of an increased number of fingers. This suggests that the expected performance improvement due to finer multipath resolution in the very wideband personal communications systems anticipated for third generation will be negated by parameter estimation error unless special care is taken to minimize these errors, such as jointly optimum detection and estimation procedures.

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