Abstracts

Effects of local oscillator phase noise on interference rejection capability of CDMA receivers using adaptive antenna arrays

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It has been determined that the receiver local oscillator noise (or sampling timing jitter) sets a fundamental limit on the ability of the adaptive antenna array to reject strong inband interferers. This work briefly describes the theoretical background of the problem and provides some bounds on interference rejection as a function of local oscillator phase noise power in adaptive antenna arrays. With the insight gained from the theoretical exploration, an example numerical simulation of the problem is presented where a null is steered in the direction of the interferer and the resulting degradation in the desired signal is presented as a result of the "smearing" of the array null because of the noisy local oscillator.

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