

IMPROVED CMA: A BEAMFORMING ALGORITHMS FOR WIRELESS SYSTEM USING SMART ANTENNA

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Abstract

The technology review indicates that performance and utility benefits could be accumulated by more control over the size and beam characteristics of the antenna. In the last couple of years smart antennas for mobile communications have received enormous interest worldwide. If the base station is to track a large number of users simultaneously, the computational cost will be large. Recently the processors with sufficient computational power are available which are used in smart antennas. In addition to increased capacity, smart antennas also introduce a number of other advantages to cellular networks, including *improved range, a higher level of security, and the possibility for new services.*

This paper aims to determine various performance measuring parameters such as beamwidth, mainlobe gain and average sidelobe gain for smart antennas used in wireless system. The channel used was Rayleigh fading and the modulation techniques were QPSK, 16 QAM, and 64 QAM. The experiments were conducted to find out the above mentioned parameters using MATLAB. The simulated results were compared with the results published in the earlier papers. It was found that Improved constant Modulus algorithm performs better than the compared Algorithms.

Keywords: Smart Antenna; Beamforming; Constant modulus algorithm; Beamwidth; QAM

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