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Title *Mutual Coupling Effects in Adaptive Antenna Arrays*

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Abstract

The present work focuses the effect of mutual coupling between the array elements on the performance of the adaptive array antennas (AAA). The actual received voltages at the antenna terminals, which include the mutual coupling, are used to estimate the weight vector based on the adaptive algorithm. The various dipole configurations are considered for analyzing the performance. The synthesized patterns are evaluated to study the effect due to the existence of the mutual coupling. It is noted that the mutual coupling affects the adaptive antenna gain and beamwidth, but does not always reduces the iterative convergence of the adaptive algorithm. It has also been indicated that the radiation pattern can be synthesized accurately even in the presence of the mutual coupling by introducing the universal steering vector (USV).