

Abstract

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Effect of the Mutual Coupling on the Bartlett Algorithm to Estimate the Direction of Arrival

This paper investigates the effect of mutual coupling on the Bartlett algorithm for direction of arrival estimation, estimation in wireless mobile communication systems utilizing adaptive antenna arrays. The half-wavelength dipole antenna elements are used in the linear array antenna to carry out a performance study of the Bartlett algorithm by investigating the effect of various parameters related to the signal environment and sensor array including the mutual coupling between the array elements. Many numerical examples show that the Bartlett algorithm for direction of arrival estimation can be applied using actual array elements instead of isotropic point sources, performed better than when there are many signals and move away from each other and by using more elements the resolution is improved.