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Title *Novel Studies in Effective Probe Cancellation in Coherent Signal Environment*

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Abstract

Signals traveling along different paths can be considered coherent with the original source signal if they are delayed and scaled version of the main signal. Coherence is a practical problem faced in beamformers as it leads to signal cancellation. In this report a weight estimation technique with multiple beam constraints and correlation matrix reconstruction is discussed to receive all the desired signals without any loss of information. Simulations are carried out to validate and also analyze array efficiency to null all the correlated/uncorrelated interfering sources and simultaneously receive all the (coherent/correlated/uncorrelated) desired signals. The work reported on multiple signal environments has wide applications in the aerospace engineering.