



## ROBUST ADAPTIVE BEAMFORMING BASED ON DOMAIN WEIGHTED PCA (WedPmOR7)

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★ Abstract :

A novel technique for robust adaptive beamforming (ABF) is proposed. The technique, referred to as Domain-Weighted PCA (DW-PCA), is founded on a basic paradigm shift from one of noise cancellation to one of signal separation. It uses the singular value decomposition (SVD) to perform second order blind signal separation after applying a simple transformation to the data. The transformation is designed to exploit prior knowledge in the form of one or more estimated steering vectors. The method is quite distinct from existing algorithms for robust ABF and can offer improved performance in many cases. The results of computer simulations, which demonstrate this point, are presented.