

## A New Dual Forward Affine Projection Adaptive Algorithm for Speech Enhancement in Airplane Cockpits

**Authors :** Djendi Mohmaed

**Abstract :** In this paper, we propose a dual adaptive algorithm, which is based on the combination between the forward blind source separation (FBSS) structure and the affine projection algorithm (APA). This proposed algorithm combines the advantages of the source separation properties of the FBSS structure and the fast convergence characteristics of the APA algorithm. The proposed algorithm needs two noisy observations to provide an enhanced speech signal. This process is done in a blind manner without the need for ant priori information about the source signals. The proposed dual forward blind source separation affine projection algorithm is denoted (DFAPA) and used for the first time in an airplane cockpit context to enhance the communication from- and to- the airplane. Intensive experiments were carried out in this sense to evaluate the performance of the proposed DFAPA algorithm.

**Keywords :** adaptive algorithm, speech enhancement, system mismatch, SNR

**Conference Title :** ICSPM 2023 : International Conference on Signal Processing Methods

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** August 17-18, 2023