

## عنوان مقاله:

Improving the Noise Reduction Performance Using AEC-GSC for Reverberant Environments

## محل انتشار:

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## خلاصه مقاله:

In this paper, noise reduction performance of the Generalized Side-lobe Canceller (GSC) algorithm and its performance degradation under reverberant environments are briefly reviewed. An acoustic echo canceller (AEC) is employed as a pre-processor for GSC noise reduction algorithm in order to improve the noise reduction performance of the GSC especially in highly reverberant environments where GSC alone fails to work properly. The proposed AEC-GSC algorithm consists of an AEC pre-processor, which includes Segment Variable Stepsize Proportionate Normalized Least Mean Square (SVS-PNLMS) algorithm recently proposed, and the GSC noise reduction algorithm. The performance of both AEC-GSC and GSC alone is evaluated through computer simulations, using real speech recordings in reverberant room environment. Through different computer simulations it is demonstrated that the proposed AEC-GSC structure performs better than GSC alone in terms of speech distortion parameters and ERLE. It also presents a better tracking behavior between the pause intervals during a speech signal due to using the SVS-PNLMS algorithm in its AEC section.

## کلمات کلیدی:

AEC, AEC-BF, AEC-GSC, BF-AEC, ERLE, GSC, Microphone Array, NLMS, Speech intelligibility, Speech Distortion, SVS-PNLMS

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