Implementation of the Noise Reduction System with Adaptive Noise Control (ANC)

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Abstract

Noise acts as a disturbance in any form of communication which degrades the quality of the information signal. Adaptive noise cancellation (ANC) is an alternative technique of estimating signals corrupted by additive noise or interference. The cancellation of noise can be efficiently accomplished by using adaptive filtering algorithms is implemented in this paper. The color noise, babble noise, impulsive noise, transient noise and other background noises are considered. This system presents analysis of two algorithms namely Least Mean Square (LMS) and Normalized Least Mean Square (NLMS). The algorithm is implemented in Matlab and tested for noise reduction in speech signals. The performance of the proposed method is evaluated by using the Signal-to-Noise ratio (SNR). According to the experimental results, the use of NLMS algorithm will perform better performance than the fixed step-size LMS algorithm.