عنوان مقاله:

Performance Analysis of an Adaptive Filter for Noise Cancellation in Speech Signals Using Combination of ALE and RLS Algorithms

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خلاصه مقاله:

In this paper, a combined algorithm for noise reduction in speech signals is presented. This algorithm consists of an ALE (Adaptive Line Enhancer) stage filter and a RLS (Recursive Least Square) stage filter. The first stage is used to reduce the sinusoidal noise of the speech signal, while the second stage filter is used to reduce the wideband noise from the signal. Two microphones (two different input sources) are supposed to be used for this algorithm; one as the noise input and the other one as the normal speech. The microphone, which contains input noise, contains both wideband and narrowband noise while the second microphone contains the corrupted speech. The narrow-band noise is reduced at ALE stage. The second stage reduces only the wide-band noise using the RLS algorithm. In these two stages the concerned algorithms are properly used to set the adaptive filter coefficients in a way so that a clean speech signal can be obtained. Simulation results in MATLAB indicate that the proposed algorithm is suitable to be implemented as a noise cancellation for speech signals

کلمات کلیدی:

Adaptive Line Enhancer, Recursive Least Square, Noise Cancellation, Speech Signal, Adaptive Filter

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