

A New Sign Subband Adaptive Filter Based on Dynamic Selection of Subbands

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Abstract : In this paper, we propose a sign adaptive filter algorithm with the ability of dynamic selection of subband filters which leads to low computational complexity compared with conventional sign subband adaptive filter (SSAF) algorithm. Dynamic selection criterion is based on largest reduction of the mean square deviation at each adaptation. We demonstrate that this simple proposed algorithm has the same performance of the conventional SSAF and somewhat faster than it. In the presence of impulsive interferences robustness of the simple proposed algorithm as well as the conventional SSAF and outperform the conventional normalized subband adaptive filter (NSAF) algorithm. Therefore, it is preferred for environments under impulsive interferences. Simulation results are presented to verify these above considerations very well have been achieved.

Keywords : acoustic echo cancellation (AEC), normalized subband adaptive filter (NSAF), dynamic selection subband adaptive filter (DS-NSAF), sign subband adaptive filter (SSAF), impulsive noise, robust filtering

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