A NEW STABLE ADAPTIVE IIR FILTER FOR ACTIVE NOISE CONTROL SYSTEMS (ThuAmPO2)

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Abstract :

The multimodal error surface and instability problem of adaptive IIR filters invokes more research. In this paper, an algorithm with the required conditions for stability is proposed based on hyperstabilty theory and evaluated in active noise control systems. The performance of the algorithm is compared to that of the FuRLMS and SHARF algorithms using computer simulations. It is shown that, in general, the proposed algorithm has a faster convergence rate. To inspect the stability, the algorithm is evaluated in the presence of impulsive noise. Simulation results show that while the proposed algorithm is stably converging, the other two algorithms diverge.

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