

The proportionate normalized least-mean-square (PNLMS) algorithms were developed in the context of network echo cancellation. They outperform the normalized least-mean-square (NLMS) algorithm only when the echo path is sparse. Unfortunately, real-world network echo path may not be that sparse sometimes, while the acoustic echo paths are usually less sparse. The improved PNLMS (IPNLMS) algorithm is less sensitive to the sparseness character of the echo path. In order to enhance the performance of this algorithm we propose a variable step-size (VSS) version of it, providing a feasible solution for the conflicting requirements of fast convergence and low misadjustment. The simulation results prove that the proposed algorithm performs very well despite of the character of the echo path, being suitable for both network and acoustic echo cancellation.