

## Speech Enhancement Using Kalman Filter in Communication

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**Abstract :** Revolutions Applications such as telecommunications, hands-free communications, recording, etc. which need at least one microphone, the signal is usually infected by noise and echo. The important application is the speech enhancement, which is done to remove suppressed noises and echoes taken by a microphone, beside preferred speech. Accordingly, the microphone signal has to be cleaned using digital signal processing DSP tools before it is played out, transmitted, or stored. Engineers have so far tried different approaches to improving the speech by get back the desired speech signal from the noisy observations. Especially Mobile communication, so in this paper will do reconstruction of the speech signal, observed in additive background noise, using the Kalman filter technique to estimate the parameters of the Autoregressive Process (AR) in the state space model and the output speech signal obtained by the MATLAB. The accurate estimation by Kalman filter on speech would enhance and reduce the noise then compare and discuss the results between actual values and estimated values which produce the reconstructed signals.

**Keywords :** autoregressive process, Kalman filter, Matlab, noise speech

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