**Speech Enhancement Using Combination of DigitalAudio effects with Kalman Filter**

**ABSTRACT—**

The term “Quality of Speech” in Speech Enhancement techniques is associated with Clarity and Intelligibility. Till now due to the variable nature and characteristics of noise with time and process to process, Speech Enhancement is a difficult problem in Noisy environment. In this paper, we proposed a method to improve the quality of speech based on combination of Digital Audio Effects with Improved Adaptive Kalman Filter when only corrupted speech is available. In this approach to enhance the Speech content in the Noisy speech signal, Digital audio effects are used. A Digital Expander generates an audio effect which operates on a low signal level and create more likely sound characteristics. And further, noise is removed by Auto Regressive modeled improved adaptive Kalman filter. The performance of the proposed method with additive color noise is found to be better compared to other spectral subtraction, wiener and Kalman filter methods in terms of Signal-to-Noise ratio and intelligibility.

Keywords— Kalman filter; intelligibility; Digital audio effect; digital expander; Wiener filter; Spectral Subtraction..