

ABSTRACT

Reverberation is a phenomenon in which characteristics of original audio signal mixed with Reverberation is the phenomenon of mixing of the original audio signal with noise signals arising due to the reflection effect. Reverberation characteristics experienced by a signal corresponding to the transfer function room (Room Impulse Response) which cause signal reflections have a delay that results vary depending on the size of the room. Reverberation signal in this case is hard to remove because reverberation signal correlated with the original signal, as well as with noise.

Dereverberation is a method to reduce reverberation signal so that the quality of voice signal to be better. One method that used to reduce dereverberation in this thesis is a method of envelope filtering based on cepstral analysis. Inputs used in the analysis are signal with reverberation and noise while the expected output is reduce reverberant signal and the signal noise resulting in improved quality of voice signal.

To get a signal with reverberation and noise and used as input in dereverberation and denoising the convolution is performed between the original signal with the room impulse response. Once it is done dereverberation and denoising process. After process dereverberation and denoising in this final, proved that the envelope method of filtering based on cepstral analysis is good enough to eliminate noise and reverberation in human speech. This is evidenced by the value of MSE (minimum MSE is 0.000350 in large room), RT (minimum RT is 0.00308375 in small room) and MOS (maximum MOS in medium room is 4.088)

Key words: human voice signals, reverberation, dereverberation, noise, denoising