Analysis of MFCC and Multitaper MFCC Feature Extraction Methods

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Abstract

In speech & audio applications, short-term signal spectrum is often represented using mel-frequency cepstral coefficient (MFCC) computed from a windowed discrete Fourier transform (DFT). Windowing reduces spectral leakage but variance of the spectrum estimate remains high. An extension to windowed DFT is called multitaper method which uses multiple time domain windows which are called as tapers with frequency domain averaging. Then detailed statistical analysis of MFCC bias & variance is done.

For speaker verification the extracted feature is used to design a model using classifier (GMM), which implements likelihood ratio test to decide whether to accept or deny the registered speaker.

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Index Terms

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