In this paper, AR-HMM on mel-scale with power and Mel-LPC based time derivative parameters has been presented for noisy speech recognition. The mel-scaled AR coefficients and mel-prediction coefficients for Mel-LPC have been calculated on the linear frequency scale from the speech signal without applying bilinear transformation. This has been done by using a first-order allpass filter instead of unit delay. In addition, Mel-Wiener filter has been applied to the system to improve the recognition accuracy in presence of additive noise. The proposed system is evaluated on Aurora 2 database, and the overall recognition accuracy has been found to be 80.02% on the average.

Index Terms

Computer Science
Signal Processing

Keywords

AR-HMM, Mel-LPC, Mel-Wiener filter, Aurora 2 database