IMPROVED HMM ENTROPY FOR ROBUST SUB−BAND SPEECH RECOGNITION (ThuPmOR1)

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✱ Abstract :   In recent years, sub−band speech recognition has been found useful in robust speech recognition, especially for speech signals contaminated by band−limited noise. In sub−band speech recognition, full band speech is divided into several frequency sub−bands and then sub−band feature vectors or their generated likelihoods by corresponding sub−band recognizers are combined to give the result of recognition task. In this paper, we use continuous density hidden Markov model (CDHMM) as recognizer and propose a weighting method based on HMM entropy for likelihood combination. We also use an HMM adaptation method, named weighted projection measure, to improve HMM entropy and its performance in noisy environments. The experimental results indicate that the improved HMM entropy outperforms conventional weighting methods for likelihood combination. In addition, results show that in SNR value of 0 dB, proposed method decreases word error rate of full−band system about 20%.

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