

## **Auditory wavelet packet filters for multistyle classification of speech under stress**

### **Abstract**

Nowadays, people are having high stress level due to high workload stress, emergency phone call and multitasking. Emotional/stress of a person affect his/her performance in daily life and speech production. The research for understanding the human emotional / stress states using speech has undergone research and development in the pass two decades. This paper presents a feature extraction method based on wavelet packet decomposition for detecting the emotions or stress state of the person. Two different wavelet packet filter bank structure are design based on Mel Scale and Equivalent Rectangular Bandwidth (ERB) Scale. Support Vector Machine (SVM) is employed as a classifier to identify the emotional/stressed states of a person In this study speech samples are taken from Speech Under Simulated and Actual Stress (SUSAS) database. Experimental result shows that the suggestion method can be used to identify the stress and emotional state of a person.

**Keywords** — Emotional/Stressed states, speech signal, stress classification, support vector machine, wavelet packet transform