

ACOUSTIC FEATURES TRANSFORMATION USING WAVELET PACKETS FOR HEARING IMPAIRED

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Abstract

A bandwidth portion of speech is transform from an original bandwidth into low - frequency band, in which hearing impaired subjects having severe high frequency hearing impairment hold speech perception. The basic transformation operation is based upon a wavelet packet technique, and the resulting transition in formants and power compression is accomplished without relinquishing the essential information contained in speech. Thus, subjects are able to perceive speech of fair intelligibility. In this paper a new processing algorithm based on wavelet packets is presented. Preliminary results of the processed speech material in six impaired listeners suggests that this algorithm could be implemented in hearing aids to be used with severe and moderate-severe hearing impairment.

Keywords: Hearing Impairment, Wavelet Packets, and Information Transmission Analysis.