

Moving Vehicle Recognition and Classification Based on Time Domain Approach

Abstract

Differentially Hearing Ability Enabled (DHAE) community cannot discriminate the sound information from a moving vehicle approaching from their behind. This research work is mainly focused on recognition of different vehicles and its position using noise emanated from the vehicle. A simple experimental protocol has been designed to record the sound signal emanated from the moving vehicle under different environment conditions and also at different vehicle speed. Autoregressive modeling algorithm is used for the analysis to extract the features from the recorded vehicle noise signal. Probabilistic neural network (PNN) models are developed to classify the vehicle type and its distance. The effectiveness of the network is validated through stimulation.