

VEHICLE DETECTION APPARATUS AND VEHICLE DETECTION METHOD

Abstract

A vehicle detection apparatus and method are provided for detecting a sound source even when a plurality of vehicles are travelling simultaneously or when noises are from something other than the desired vehicle and calculating the location in the travelling direction and lane direction of the sound source and the number of passing vehicles. Noises are collected by a matrix of microphones (402) in the same plane, the outputs thereof sampled periodically with time windows in a noise component matrix calculation section (122), the direction in the vehicle travelling direction and lane direction of the sound source in each window is estimated in an α -direction calculation section (410) and a β -direction calculation section (417), the vehicle is detected by the degree of similarity between the estimated directions in the travelling direction and sound templates in a vehicle detection section (124), and the estimated directions in the lane direction are counted for each lane and the location in the lane direction of the sound source is detected in a lane detection section (312).

Fig. 11