Neural network based for automatic vehicle classification in forward scattering radar

ABSTRACT

The paper is dedicated to the continuation and improvement of the vehicle classification method of SISAR micro-sensors for ground vehicles previously presented in RADAR2004 and RADAR2005 [1ó2]. In spite of a number of theoretical research efforts in the application of SISAR for target classification [1ó4] , there are only few research concentrate on the classification processing to confirm the feasibility of SISAR's practicality. This paper begins with an overview and summary of the authors' previous research. Then a new research topic in the improvement of the classification performance for various scenarios using Neural Network is proposed. Finally experimental results, conclusions and recommendations are presented.

Keyword: Forward scattering radar; Neural network; Principal component analysis; Vehicle classification