

## عنوان مقاله:

Intelligent identification of vehicle's dynamics based on local model network

## محل انتشار:

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## خلاصه مقاله:

This paper proposes an intelligent approach for dynamic identification of the vehicles. The proposed approach is based on the data-driven identification and uses a high-performance local model network (LMN) for estimation of the vehicle's longitudinal velocity, lateral acceleration and yaw rate. The proposed LMN requires no pre-defined standard vehicle model and uses measurement data to identify vehicle's dynamics. The LMN is trained by hierarchical binary tree (HBT) learning algorithm, which results in a network with maximum generalizability and best linear or nonlinear structure. The proposed approach is applied to a measurement dataset, obtained from a Volvo V70 vehicle to estimate its longitudinal velocity, lateral acceleration and yaw rate. The results of identification revealed that the LMN can identify accurately the vehicle's dynamics. Furthermore, comparison of LMN results and a multi-layer perceptron (MLP) neural network demonstrated the far-better performance of the proposed approach.

## کلمات کلیدی:

local model network, hierarchical binary tree, vehicle's dynamics, Identification, Neural network

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/894080>

