

Energy Consumption Models for Electric Vehicles: Survey and Proposal of a More Realistic Model

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Abstract : Replacing combustion engine vehicles by electric vehicles (EVs) is a major step in recent years due to their potential benefits. Battery autonomy and charging processes are still a big issue for that kind of vehicles. Therefore, reducing the energy consumption of electric vehicles becomes a necessity. Many researches target introducing recent information and communication technologies in EVs in order to propose reducing energy consumption services. Evaluation of realistic scenarios is a big challenge nowadays. In this paper, we will elaborate a state of the art of different proposed energy consumption models in the literature, then we will present a comparative study of these models, finally, we will extend previous works in order to propose an accurate and realistic energy model for calculating instantaneous power consumption of electric vehicles.

Keywords : electric vehicle, vehicular networks, energy models, traffic simulation

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