

Transient Effects in Simulations of Hybrid Electric Drivetrains

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Abstrak

This work presents an investigation of the influence of different modeling approaches on the quality of fuel economy simulations of hybrid electric powertrains. The main focus is on the challenge to accurately include transient effects and reduce the computation time of complex models. Methods for the composition of entire powertrain models are analyzed as well as the modeling of the individual components internal combustion engine and battery. The results shall help with the selection of suitable models for specific simulation tasks and provide a deeper understanding of the dynamic processes within simulations of hybrid electric vehicles.