

عنوان مقاله:

A New Stochastic Approach for Modeling of Random Behavior of Plug-in Hybrid Electric Vehicle Using Monte Carlo Simulation

محل انتشار:

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خلاصه مقاله:

In recent years, decaying fossil fuel resources of power plants and their low efficiency has led to growing local generation with lower cost, higher efficiency. Operation of Plug-in Hybrid Electric Vehicle (PHEV) is one important options in addressing the above challenges. If a significant number of the PHEVs plug into the system, operator can operate all of them as small power plants. The PHEVs can have many applications in power systems studies including providing ancillary services and increasing base load. As a result, scheduling and management of the PHEVs has become an inevitable issue. To achieve this purpose, this paper investigates the effects of random behavior of the PHEV. In addition, in this paper, a new random-based approach is presented for PHEVs which named Monte Carlo Simulation (MCS). The obtained results are compared with the Markov approach. Simulation results illustrated the sufficiency and profitability of the newly developed framework, when compared with other methods.

کلمات کلیدی:

Markov Approach, Monte-Carlo Simulation, Plug-in Hybrid Electric Vehicle (PHEV), Power Grid, Stochastic Modeling

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