电动汽车充电站谐波的工程计算方法

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摘要
研究电动汽车充电站接入电力系统后对公共电网产生谐波的特点和计算方法。在建立充电站谐波计算仿真模型的基础上，通过对仿真数据及充电站谐波特点的分析，提出一种简化的充电站谐波工程算法，采用线性分段函数近似充电机等值非线性电阻，计算一个充电周期内的谐波变化特性和谐波最大值，最后验证了该算法在工程中的可用性。
关键词　　电动汽车　充电站　谐波　仿真
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A Harmonic Engineering Calculation Method for Electric Vehicle Charging Station

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Abstract
The features and calculation method for harmonics are researched while electric vehicle (EV) charging station is switched into public power grid. On the basis of establishing simulation model for charging station harmonic calculation, by means of analyzing simulation data and harmonic feature of charging station, a simplified engineering calculation method for harmonic in charging station is proposed. In the proposed method, a linear piecewise function is adopted to approximate the equivalent nonlinear resistance of charger and is used to calculate harmonic variation characteristic and the maximum of harmonic during a charging cycle. Calculation results verify the usability of the proposed algorithm in engineering.

Key words　　electric vehicle (EV)　charging station　harmonics　simulation

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