

特高压半波长输电系列论文

特高压半波长交流输电线路稳态电压特性

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摘要:

半波长交流输电技术具有远距离、大容量输电特征, 在我国应用前景广阔, 完善其电压特性研究, 对我国电力系统规划和运行意义重大。根据电路理论推导了用于半波长输电线路仿真的线路参数模型, 随后从入射波、反射波理论以及无功功率理论2个方面分析了半波长输电线路稳态电压特性, 最后应用PSD软件仿真研究半波长线路沿线电压, 验证了理论分析结论

关键词: 半波长交流输电技术 特高压 电压特性 入射波 反射波 无功功率

Steady State Voltage Characteristic of UHV Half-wavelength AC Transmission Line

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Abstract:

Due to its vast application prospect in China and the features of long distance power transmission and high available transmission capacity (ATC), it is significant for the power system planning and operation in China to research steady state voltage characteristic of half-wavelength AC transmission (HWACT). Based on the theory of electric circuit, the line parameter model for HWACT line is derived, and in two aspects, namely the theory of incident and reflected wave and the theory of reactive power, the steady state voltage characteristic of HWACT line is analyzed. Finally, the voltage distribution along HWACT line is simulated by PSD software, thus the results of theoretical analysis are verified.

Keywords: half-wavelength AC power transmission UHV voltage characteristic incident wave reflected wave reactive power

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