

国家重点基础研究项目

电力系统电压稳定机理研究

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摘要:

正确认识电力系统电压稳定机理是电压稳定研究进一步发展的关键。在分析了电压稳定定义和数学模型后, 给出了物理意义明确的电压稳定和电压崩溃的定义。分别对纯电阻电路和交流电路的电压稳定性机理进行了研究, 说明了电力系统电压稳定性的机理, 并从输电网络输电极限、负荷动态特性以及受端系统电压支撑3个方面对电力系统电压稳定进行机理解释。

关键词:

Study on Mechanism of Power System Voltage Stability

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Abstract:

It is the key problem for further development of the research on voltage stability to correctly understand the mechanism of power system voltage stability. On the basis of analyzing both the definition of voltage stability and its mathematical models, the definitions of voltage stability and voltage collapse with determinate physical meanings are given. The voltage stability mechanisms of pure resistance circuit and AC circuit are researched respectively to explain the mechanism of power system voltage stability, and the voltage stability mechanism of power system is explained in three aspects, i.e., transmission limitation of power network, dynamic characteristics of power load and voltage support at receiving end system.

Keywords:

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