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抗偏移技术

SS型PT对称磁耦合无线电能传输系统特性分析

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Characteristic Analysis of SS Topological PT Symmetrical Magnetic Coupling Wireless Power Transfer System

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摘要

为深入分析PT对称系统的电路特性,给实际系统设计提供理论准则,基于电路理论,从系统的工作原理出发对系统进行建模,证实了PT对称系统的工作机制实质为实本征态机制,并给出了系统结构以及运行模式和系统参数之间的数学关系,为实际系统的设计提供了参数准则。在此基础上,对比分析了不同实本征态的阻抗特性及能效特性,为实际系统的工作模式选取提供了理论依据。

Abstract

To analyze the circuit characteristics of a parity time(PT) symmetrical system and provide theoretical guidelines for the design of an actual system, the system is modelled based on the circuit theory and its working principle. It is proved that the working mechanism of the PT symmetrical system is a real eigenstate mechanism in essence. In addition, the mathematical relationship among the system structure, its operation modes and its parameters is given, and a parameter criterion is provided for the design of the actual system. On this basis, the impedance and energy efficiency characteristics in different real eigenstates are compared and analyzed, which provides a theoretical basis for the selection of the working mode of the actual system.

关键词

无线电能传输 / 磁耦合 / 宇称时间对称 / 特性分析

Key words

Wireless power transfer / magnetic coupling / parity time(PT) symmetry / characteristic analysis

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