

国家重点基础研究项目

混合型有源电力滤波器的改进解耦型分频控制

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**摘要:** 为了提高企业配电网电能质量, 本文讨论了一种混合型有源滤波器的控制方法。针对一般模糊广义积分控制器对谐波调节的交叉耦合现象, 本文提出了一种改进解耦型模糊分频控制方法, 有效结合模糊控制与分频控制的优点来真正实现对各次谐波的模糊PI控制。最后通过仿真和实验验证所提出方法的正确性, 并提高了装置的补偿性能与鲁棒性。

**关键词:** 混合型有源滤波器 数学模型 广义积分 交叉耦合 模糊分频控制

Improved Divided-Frequency Decoupling Control of Hybrid Active Power Filter

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**Abstract:** In this paper, a hybrid power active filter was discussed to improve the power quality. As for a common fuzzy generalized integral controller would produce a cross-coupling phenomenon for harmonics suppression, so an improved decoupling fuzzy divided-frequency controller was proposed to combine the merits of fuzzy control and divided-frequency control, and truly realize fuzzy PI control for each harmonic. Finally, the results of simulation and experiments have verified the correctness of the proposed method, and it has improved the compensation performance and robustness effectively.

**Keywords:**

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