



并联型APF的一种简单PI补偿控制方法

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摘要: 利用所建立的并联型APF在三相坐标系下的数学模型, 通过分析发现常规PI控制下的并联型APF电流闭环传递函数中存在一个周期性的干扰信号, 对系统的跟踪控制性能有显著的影响。为了消除干扰、改善系统的性能, 采用补偿的方法构成新的PI控制系统, 并在EMTDC/PSCAD环境下进行了仿真。结果表明, 该补偿PI控制方法提高了APF的电流跟踪性能。

关键词: APF; 电流跟踪; PI控制; 补偿

A Simple Compensatory PI Control on Shunt APF

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Abstract: With the mathematic model of shunt APF in three-phase stator coordinates set up in this paper, it is found by calculation analysis that there is a period disturbing signal in the current closed loop transfer function of the general PI control, and the disturbing signal influences the performance of current track distinctly. In order to eliminate the disturbing signal and improve the system performance, a new PI control based on compensation is put forward, and the simulation with EMTDC/PSCAD is carried out. The results show that compensatory PI control can enhance the current track performance of APF.

Key words: APF; current track; PI control; compensation

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