

عنوان مقاله:

Mitigation of Switching Harmonics in Shunt Active Power Filter Based on Variable Structure Control Approach

محل انتشار:

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خلاصه مقاله:

This paper presents a novel control approach used in shunt active power filter based on variable structure control combined with Random PWM technique (RVSC) that provides robust, fast, and more favorable performance for active power filter. This control strategy is compared with two other strategies to show the effectiveness of the introduced methods; pulse width modulated proportional-integral control (PIC), and Random Pulse Width Modulated proportional-integral control (RPIC). The simulation results with and without the shunt active power filter in the system are presented and analyzed. The simulation results show that the RVSC controller has a better performance than other control strategies, allowing compensation of reactive power, reducing high frequency harmonics thus overcoming the problem of electromagnetic interference (EMI), reducing dc current injection below the limit specified in IEEE-1547 standard, and also reducing the harmonic level below the limit specified in IEEE-519 standard

کلمات کلیدی:

Active power filter Random PWM Variable Structure Control THD

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