عنوان مقاله:

Fixed Frequency Sliding Mode Controller for the Buck Converter

محل انتشار:

دومین کنفرانس بین المللی الکترونیک قدرت و سیستم های درایو (سال: 1389)

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خلاصه مقاله:

In this paper a sliding mode controller is proposed for a continuous current mode buck converter. High proficiency and simplicity of implementation are the most significant features of the proposed controller. To fix the switching frequency of the converter, the sign function which generates the discontinuous control law in sliding mode controller, is replaced with a hysteresis relay whose cycle is calculated respect to the acceptable output voltage ripple. The proposed controller is analyzed and simulated for an 8kw, 150V to 100V buck converter with Matlab (Simulink Toolbox). Simulation results show the high performance of the proposed controller specifically the switching frequency which is fixed at 16 KHz.

کلمات کلیدی:

DC/DC Converter, sliding mode control, fixed switching frequency, hysteresis relay

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