

عنوان مقاله:

Design and Implementation of a Constant Frequency Sliding Mode Controller for a Luo Converter

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 29، شماره 2 (سال: 1394)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

In this study, a robust controller for voltage regulation of a POESLL converter operated in continuous conduction mode is presented. The POESLL converter is a DC/DC converter with a high voltage gain. DC/DC converters are used in telecommunication systems, power sources and industrial applications. Owing to the switching operation, the structure of the POESLL converter is non-linear. In addition, because of the load and input voltage variations, the structure of the POESLL converter is time-varying. In order to regulate the output voltage of the POESLL converter, a non-linear controller is required. The proposed controller is developed based on constant frequency sliding mode method. The sliding mode controllers can cope with the non-linear and time-varying structure of the DC/DC converters. The performance of the proposed controller is studied in PSIM software. A laboratory model of the proposed controller has been implemented. In this paper, design, simulations and experimental results are presented to show the effective performance of the proposed controller for voltage regulation of the POESLL converter.

کلمات کلیدی:

POESLL Converter Constant Frequency Sliding Mode Controller Laboratory Prototype

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