

عنوان مقاله:

High performance Cuk converter considering non-linear inductors for photovoltaic system applications

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خلاصه مقاله:

The Cúk converter, which has voltage buck and boost ability, offers high flexibility as an interface device for solar panels. In addition, current ripple can be more reduced because of two input and output inductors at both sides. This paper presents a new application of current-variable inductors in a Cúk converter that reduces the size and capacity of storage elements. Because of two inductors in structure, implementation of these variable inductors is important; therefore, the proposed design leads to cost and size savings, increases the performance interval of tracker to gain solar energy at lower sunlight levels, and simplifies control strategy. To validate the effectiveness of this structure, the analytical analysis, simulation results using PSCAD/EMTDC software and experimental results are presented.

کلمات کلیدی:

Variable inductor, Photovoltaic, Obtaining maximum power, Impedance match, Cúk converter

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