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DC-DC boost converter for grid-tied renewable energy generation systems (Article)

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Abstract

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In on-board electronic circuits the use of DC-DC converters is very common for translation and stability of DC levels. These converters are used primarily to step-up or step-down DC levels, they are also employed for steady DC voltage output generated from ambient energy sources such as solar and wind power. In such converters, an inductor plays a major role by being fluxed to get magnetized to a constant voltage level and then it is de-fluxed by diverting the current using a switching electronic device. This paper studies the effect of change in inductance on the resulting output voltage in a boosting mode. The results are standardized to a variety of inductance coil by given geometrical dimensions. The experimental and analytical details of the design is explained and discussed thoroughly, also resulting voltage outputs against each change in inductance level its effect are presented to be having a reasonably matched level in comparisons to results in recently reported research work. The potential applications of this work can be in zero-crossing, frequency, phase and amplitude synchronization in grid-tied inverters. © IDOSI Publications, 2014.

Author keywords

[Inverters](#) [Low pass filter](#) [Sinusoidal waveform](#)

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