

DC-dc boost converter stability with constant power load

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Description

In this paper, the fuzzy logic control (FLC) is presented to address the instability effects of constant power load, and how to regulate the output voltage of a DC-DC Boost converter. The constant power load has negative incremental resistance, which makes the system unstable under a small disturbance on the load. To evaluate the performance, the proposed method is simulated by a MATLAB-SIMULINK model. Furthermore, the proposed concept is validated experimentally using a field programmable gate Array FPGA-Based Hardware-in-the-Loop Simulation by hardware description language.