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Fuzzy logic controller for a photovoltaic system with a SEPIC converter

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In order to control the output voltage of a photovoltaic system with a DC-DC converter; type Single Ended Primary Inductor Converter (SEPIC); A fuzzy logic controller is investigated in this paper. The system is designed for 210 W solar PV (SCHOTT 210) panel and to feed an average demand of 78 W. This system includes solar panels, SEPIC converter and fuzzy logic controller. The SEPIC converter provides a constant DC bus voltage and its duty cycle controlled by the fuzzy logic controller which is needed to improve PV panel's utilization efficiency. A fuzzy logic controller (FLC) is also used to generate the PWM signal for the SEPIC converter. The model of the power system is developed using Sim Power System tool box and the control part is realized using Fuzzy Logic Tool box in MATLAB.

Biography

Meryem Oudda received her LSc and MSc degrees in electrical engineering from TAHRI Mohamed Bechar University, Algeria, in 2009 and 2011 respectively, where she has been working toward the doctoral degree in the Department of Electric and Electronics Engineering since January 2012. She is currently a research member at the research laboratory: Command Analyze and Optimization of Electro-Energetic Systems, TAHRI Mohamed Bechar University, Algeria.

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