
Parameters optimization of fuzzy logic controllers for a DC-DC converter in Photovoltaic Panels using multi-objective Genetic optimization

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Abstract Due to limited resources and increasing cost of fossil fuel energy and the related pollution of these sources, using renewable energy, especially solar energy is increasing. On the other hand, power electronic circuits are widely being used in industry. DC-DC Converter is one of the important ones. Unfortunately, the nonlinear behavior of these converters due to switching frequency is a main problem. In this thesis, optimal design of fuzzy controllers for DC-DC converters has been done. The photovoltaic panel is the input DC source for the converter and the main goal is to determine the best membership function of the fuzzy rules controller. In this regard, genetic algorithm is used to find optimum membership function. Results show the better performance of the fuzzy controller in comparison to PI controller.

Keywords : . Key word: DC-DC converters, fuzzy controllers, genetic algorithm

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