Analysis and Modeling of Photovoltaic System with Different Research Methods of Maximum Power Point Tracking

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Abstract : The purpose of this paper is the analysis and modeling of the photovoltaic system with MPPT techniques. This system is developed by combining the models of established solar module and DC-DC converter with the algorithms of perturb and observe (P&O), incremental conductance (INC) and fuzzy logic controller(FLC). The system is simulated under different climate conditions and MPPT algorithms to determine the influence of these conditions on characteristic power-voltage of PV system. According to the comparisons of the simulation results, the photovoltaic system can extract the maximum power with precision and rapidity using the MPPT algorithms discussed in this paper.