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Comparison Between Fuzzy and P&O Control for MPPT for Photovoltaic System Using Boost Converter

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Abstract : The studies on the photovoltaic system are extensively increasing because of a large, secure, essentially exhaustible and broadly available resource as a future energy supply. However, the output power induced in the photovoltaic modules is influenced by an intensity of solar cell radiation, temperature of the solar cells and so on. Therefore, to maximize the efficiency of the photovoltaic system, it is necessary to track the maximum power point of the PV array, for this Maximum Power Point Tracking (MPPT) technique is used. Some MPPT techniques are available in that perturbation and observation (P&O) and Fuzzy logic controller (FLC). The fuzzy control method has been compared with perturb and observe (P&O) method as one of the most widely conventional method used in this area. Both techniques have been analyzed and simulated. MPPT using fuzzy logic shows superior performance and more reliable control with respect to the P&O technique for this application.

Keywords : photovoltaic system, MPPT, perturb and observe, fuzzy logic
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