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Optimized MPPT design using Fuzzy Logic and PSO Algorithm

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***Abstract*--In recent times a huge attention has been given on development of proper planning at the global, national and regional level to handle the energy consumption on one hand and consequent emissions on the other. We have focused on MPPT based solar system performance enhancement by use of fuzzy logic controller's designs optimized by particle swarm optimization (PSO). We have described about different latest A.I. techniques that has been hybrid with fuzzy logic for improving PV array based solar plants performance in recent time. The artificial intelligence technique applied in this work is the Particle Swarm Optimization (PSO) algorithm and is used to optimize the membership functions for maximum power point tracking rule set of the FLC. By using PSO algorithm, the optimized FLC is able to maximize energy to the system loads while also maintaining a higher stability and speed as compared to P& O based MPPT algorithm.**

Keywords*-- *Fuzzy Logic Controller, MPPT, PSO, P&O, Solar System.