Comparison of MPPT Techniques with Regard to Speed of Convergence

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In order to extract maximum power available from a solar cell in a photovoltaic system, maximum power point tracking (MPPT) should be activated. Several MPPT techniques have been developed over the past years. In this paper, five Maximum Power Point (MPP) tracking techniques are compared with regard to their convergence speed and complexity of implementation. They are Perturb and Observe (P&O) method, Incremental Conductance method, Three Point method, Constant Voltage Method and Fractional Short Circuit Current Method. The results of the simulation study are shown for a clear sky situation assuming that there is no sudden irradiance or temperature variances. Finally, it has been proved from simulation studies that Constant Voltage method is simpler to implement and faster in MPP tracking compared to the other described methods.