

Performance Analysis of AI Based Interleaved Boost Converter under PV Partial Shaded Conditions

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Abstract	Abstract: A partial shading circumstance is harmful to the solar modules or arrays that are being shadowed. Additionally, it significantly lowers the output power generated. In contrast to a standard boost converter, the interleaved boost converter has various benefits, counting minimal voltage and current waves, reduced swapping loss, better efficiency, etc. The interleaved boost converter connects 'n' paralleled converters to progress the converter's general performance. A thorough performance analysis of the proposed PV system's interleaved boost converter (IBC) is accessible in this work. Owing to the changing environment conditions, chasing the extreme power point in solar PV organizations is a difficult operation. Moreover, since here are numerous summits in the control voltage features throughout incomplete shade so the tracking method develops more problematic. In this study, a unique method for monitoring IBC as ANN based maximum power point tracker in partially shadowed sets is presented. The PWM generator used by the PI controller to produce the output voltage, which it then supplies to the single phase Voltage Source Inverter (VSI) is presented. The proposed MPPT algorithm and the PV organization were both simulated using the Mat lab/Simulink setting, also the comparative analysis are carried out in this paper , the efficiency of the IBC is monitored as 90.3%
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