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A Novel Odd Even Configuration to Reduce Solar Power Mismatch under Partial Shading Condition

Priti D. Alone[1] and Gaurav Karlekar[2]
PG Scholar[1], Ballarpur Institute of Technology, Ballarpur, Maharashtra, India
Assistant Professor[2], Ballarpur Institute of Technology, Ballarpur, Maharashtra, India

Abstract: *In this project the effect of Partial Shading Condition (PSC) on various solar photovoltaic (PV) array topologies has been studied extensively. PSC reduces the maximum power of a PV array and produces multiple Maximum Power Points (MPPs) in the PV characteristics. A novel PV array configuration, as the Odd Even Configuration (OEC) named has been proposed to mitigate the effects of PSC under a diagonally progressing shadowing scenario and performance parameters like mismatch power loss, Fill Factor (FF) and Performance Ratio (PR), have been measured. The performance of the proposed OEC has been compared with pre-existing standard configurations such as TCT, SP-TCT, BL-TCT and BL-HC. Another recently proposed configuration has also been used for comparison. The effect of variation in temperature on the shade dispersion effect has also been studied. All the considered PV array configurations have been modelled configuration is found to be superior to other configurations for all the PSCs considered, with minimum power loss and improved FF.*

Keywords: Photovoltaic, Partial shading condition, Reconfiguration strategy, Global Maximum Point, Mismatch Power loss

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