Alternating Current Photovoltaic Module Model

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Abstract : This paper presents modeling of a Alternating Current (AC) Photovoltaic (PV) module using Matlab/Simulink. The proposed AC-PV module model is simple, realistic, and application oriented. The model is derived on module level as compared to cell level directly from the information provided by the manufacturer data sheet. DC-PV module, MPPT control, BC, VSI and LC filter, all were treated as a single unit. The model accounts for changes in variations of both irradiance and temperature. The AC-PV module proposed model is simulated and the results are compared with the datasheet projected numbers to validate model's accuracy and effectiveness. Implementation and results demonstrate simplicity and accuracy, as well as reliability of the model.

Keywords : PV modeling, AC PV Module, datasheet, VI curves irradiance, temperature, MPPT, Matlab/Simulink

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