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Ghareeb, A., Tamimi, M., Jaber, M., Jaradat, S., Khatib, T.

A new method for extracting I-V characteristic curve for photovoltaic modules using artificial neural networks
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Abstract

This paper presents a new I-V curve prediction method using Artificial Neural Networks (ANNs), based on two ANNs, Generalized Regression Neural Network (GRNN) and cascaded forward neural network (CFNN). Solar radiation, ambient temperature, and the specification of PV module (open circuit voltage and short circuit current at STC) are inputs for this method. This method has a high accuracy in predicting I-V curves with average Mean Absolute Percentage Error (MAPE), Mean Bias Error (MBE) and Root Mean Square Error (RMSE) are 1.09%, 0.0229(A) and 0.0336(A) respectively for the validation data. © 2018 IEEE.

Author Keywords

ANN; I-V curve; P-V curve; photovoltaic; solar cell

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