

Photovoltaic Maximum Power-Point Tracking Using Artificial Neural Network

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Abstract : Renewable energy sources now significantly contribute to the replacement of traditional fossil fuel energy sources. One of the most potent types of renewable energy that has developed quickly in recent years is photovoltaic energy. We all know that solar energy, which is sustainable and non-depleting, is the best knowledge form of energy that we have at our disposal. Due to changing weather conditions, the primary drawback of conventional solar PV cells is their inability to track their maximum power point. In this study, we apply artificial neural networks (ANN) to automatically track and measure the maximum power point (MPP) of solar panels. In MATLAB, the complete system is simulated, and the results are adjusted for the external environment. The results are better performance than traditional MPPT methods and the results demonstrate the advantages of using neural networks in solar PV systems.

Keywords : modeling, photovoltaic panel, artificial neural networks, maximum power point tracking

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