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Abstract

The main source of renewable energy used in this work is photovoltaic source. Photovoltaic is a clean source that dependent on solar irradiance to generate electricity from sun light. The identification of solar cell variables is one of the main items in simulation and modeling of photovoltaic model. The models used in this work are triple diode and double diode and single diode solar cells. A novel optimization method called; weighted mean of vectors (INFO) is applied in estimating the solar cell variables in the three models. The fitness function of identification is minimizing the root-mean-square-error (RMSE) between the measured data of current and the data of simulated current based on the parameters identified from the algorithms. Comparison between INFO technique with another six methods such as Harris hawk's optimization (HHO), Tunicate Swarm Algorithm (TSA), Sine cosine algorithm (SCA), Moth Flam Optimizer (MFO), Grey Wolf Optimization (GWO), Chimp Optimization Algorithm (ChOA), Runge Kutta Optimization (RUN).