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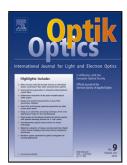
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A parameter identification model for the Photovoltaic grid-

connected inverter

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Abstract: The estimation of the photovoltaic (PV) inverter model parameters could lay

the foundation for analyzing the grid-connected operation of PV generation system. In

this paper, the control parameters to be identified are determined first through the

analysis of the double loop control system structure of the PV inverter. The concerned

parameters includes four proportional and integral coefficients (k_{PU} , k_{IU} , k_{PI} and k_{II}) and

the filtering inductance (L). Then a parameter identification model based on simulated

annealing-particle swarm optimization (SAPSO) algorithm is proposed to identify the

control parameters in MATLAB environment. The comparison between the

identification results of the SAPSO and the other optimization algorithms indicates that

SAPSO identification model possesses high accuracy and fast convergence speed. The

simulation results with identified values under the disturbance of temperature and

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