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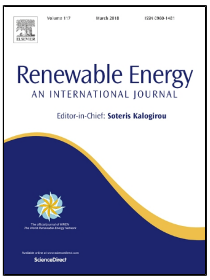

Metaheuristic optimization based fault diagnosis strategy for solar photovoltaic systems under non-uniform irradiance

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HIGHLIGHTS

- A metaheuristic optimization based fault diagnosis approach is proposed for SPV systems.
- Individual SPV array output power at maximum power point is considered as the key parameter for diagnosis.
- Module open circuit and short circuit faults under non-uniform irradiance condition are diagnosed.
- A simulated SPV system in Matlab Simulink is designed and fabricated to realize the approach.
- Real time experimentations on a physical test system are carried out to validate the strategy.
- Improved real coded genetic algorithm is employed to solve this search problem.