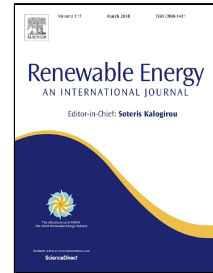


# Accepted Manuscript

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

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PII: S0960-1481(17)31016-9  
DOI: 10.1016/j.renene.2017.10.053  
Reference: RENE 9341  
To appear in: *Renewable Energy*  
Received Date: 07 March 2017  
Revised Date: 17 July 2017  
Accepted Date: 17 October 2017

Please cite this article as: Saborni Das, Abhik Hazra, Mousumi Basu, Metaheuristic optimization based fault diagnosis strategy for solar photovoltaic systems under non-uniform irradiance, *Renewable Energy* (2017), doi: 10.1016/j.renene.2017.10.053

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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.

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