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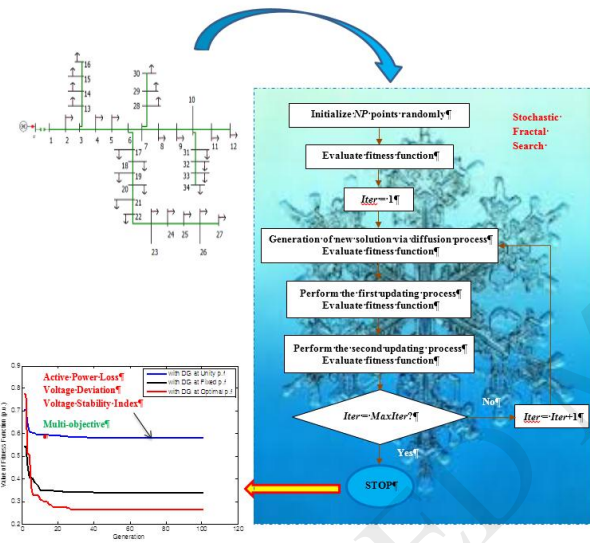
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Graphical abstract



Highlights

- A newly effective SFSA is proposed for solving the optimal allocation of distributed generators (OADG) in distribution networks.
- Three objective functions are considered including the active power loss reduction, voltage profile improvement, and voltage stability increment.
- Three operation modes of DGs are considered including unity power factor, fixed power factor, and optimal power factor.
- The effectiveness of the proposed SFSA has been verified on the IEEE 33-bus, 69-bus, and 118-bus systems.
- The test results have indicated that the proposed SFSA is very effective for solving the OADG problem.

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