Optimal placement and sizing of a DG based on a new power stability index and line losses

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ABSTRACT
This paper proposes a new algorithm for Distributed Generator (DG) placement and sizing for distribution systems based on a novel index. The index is developed considering stable node voltages referred as power stability index (PSI). A new analytical approach is adopted to visualize the impact of DG on system losses, voltage profile and voltage stability. The proposed algorithm is tested on 12-bus, modified 12-bus and 69-bus radial distribution networks. The test results are also compared and found to be in close agreement with the existing Golden Section Search (GSS) algorithm.

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