

MULTI POPULATION TRADITIONAL EVOLUTIONARY
PROGRAMMING APPROACH FOR DISTRIBUTED GENERATION

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PROGRAMMING APPROACH FOR DISTRIBUTED
GENERATION**

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ABSTRACT

This thesis presents, the study involves in the development of multi population Evolutionary Programming for Distributed Generation (DG) installation in distribution systems. While installing the DG into the system, improve on the voltage profile and reduction of power loss based on the optimal location and sizing of DG. Generally, DG is defined as a small-scale electricity generation which the electricity is generated in large power stations to achieve cost reduction. The power stations are commonly located where the source of energy is easily obtainable, whereby the DG installation can have a significant impact on the power flow analysis in term of power losses minimization. The algorithm is applied on IEEE 30 buses radial distribution systems for performance evaluation. The results indicated that, the DGs are located at their optimal locations and sizes by depending on the minimal losses and improve the voltage profile at various type of DG technology used in the distribution network.

Index Terms— Multi Population Evolutionary Programming, Migration, Optimal location and sizing, 30-Bus IEEE Distribution System.

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