Abstract

Yasser Gaber A. Dessouky

Smart Electric Grids Three-Phase Automatic Load Balancing Applications using Genetic Algorithms

Smart Electrical Grids require nowadays a large interest in the electrical load distribution balancing problem. This problem is a well known for not having an optimal solution for large-scale systems, where the number of single phase consumers connected to three phase systems increases especially in very large-scale electrical distribution systems. This paper presents a new control technique for an automatic circuit phase change as well as an optimisation approach using Genetic Algorithms (GA) used to enhance the solution of electrical load distribution balancing problem. In the first part of the paper, the system under study is introduced, as well as the various solutions adopted. In the second part of the paper, a GA formulation and implementation of the solution is presented. The efficiency of the GA solution is also discussed.