Distribution feeder reconfiguration using Hybridization of bee colony optimization and sequential quadratic programming

Ehsan Afzalan[1], Mahmood Joorabian[2]

1- M.Sc,electrical engineering,Ehsan.afzalan@ymail.com,.
2-Shahid Chamran University of Ahvaz, Ahvaz, Iran.mjoorabian@scu.ac.ir, PhD.

Abstract :

One of the very important ways to save the electrical energy in distribution system is network reconfiguration for loss reduction. This paper proposes a hybrid methodology integrating bee colony optimization with sequential quadratic programming for solving distribution feeder reconfiguration problem. This hybrid method incorporates bee colony optimization as a base level search which can give a good direction to the optimal region and sequential quadratic programming as a local search procedure which is used to fine tune that region for achieving the final solution. Save the electrical energy in distribution system is network reconfiguration for loss reduction is determined through the software code written in MATLAB. Numerical results of a three system have been presented to demonstrate the performance and applicability of the proposed method. The results obtained from the proposed method are compared with those obtained from other methods.

Keywords: distribution feeder reconfiguration, bee colony optimization, sequential quadratic programming.

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