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Solving Directional Overcurrent Relay Coordination Problem Using Artificial Bees Colony

Authors : M. H. Hussain, I. Musirin, A. F. Abidin, S. R. A. Rahim

Abstract : This paper presents the implementation of Artificial Bees Colony (ABC) algorithm in solving Directional OverCurrent Relays (DOCRs) coordination problem for near-end faults occurring in fixed network topology. The coordination optimization of DOCRs is formulated as linear programming (LP) problem. The objective function is introduced to minimize the operating time of the associated relay which depends on the time multiplier setting. The proposed technique is to taken as a technique for comparison purpose in order to highlight its superiority. The proposed algorithms have been tested successfully on 8 bus test system. The simulation results demonstrated that the ABC algorithm which has been proved to have good search ability is capable in dealing with constraint optimization problems.

Keywords : artificial bees colony, directional overcurrent relay coordination problem, relay settings, time multiplier setting
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