Non-Smooth Economic Dispatch Solution by Using Enhanced Bat-Inspired Optimization Algorithm

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Abstract : Economic Dispatch (ED) is one of the most important problems in the operation of power plants which can help to build up effective generating management plans. The practical ED problem has non-smooth cost function with nonlinear constraints which make it difficult to be effectively solved. This paper presents a novel heuristic and efficient optimization approach for a constrained non-smooth economic dispatch (ED) problem using the new Bat algorithm (BA). The proposed algorithm easily takes care of different constraints. Different modifications in moving patterns of the bat optimization method are proposed to search the feasible space more effectively. The simulation results on IEEE 40-unit test system obtained by the proposed algorithms are compared with the results obtained using other recently develop methods available in the literature.