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APPLICATION OF MODIFIED (PSO) AND SIMULATED ANNEALING ALGORITHM (SAA) IN ECONOMIC LOAD DISPATCH PROBLEM OF THERMAL GENERATING UNIT

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Abstract

This paper deals with the problem of economic load dispatch (ELD) in thermal generating unit. The main issue of generating unit to minimize the cost of generation so modified Particle Swarm Optimization (PSO) method is proposed for solving this issue. The modified PSO method was developed through simulation of a simplified social system and has been found to be robust in solving continuous nonlinear optimization problems in terms of accuracy of the solution and computation time. The proposed algorithm is applied for the ELD of six unit thermal plant systems and the performance of the proposed modified PSO method is compared with the Simulated Annealing Algorithm (SAA). All results obtained through MATLAB Simulink software. The comparison of results shows that the proposed modified PSO method was indeed capable of obtaining higher quality solutions efficiently for ELD problems within less computation time.

Author Keywords

Economic Load Dispatch (ELD), Particle Swarm Optimization (PSO), Simulated Annealing Algorithm (SAA), MATRIX LABORATORY (MATLAB)

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