Abstract

This paper presents a solution of the Economic Load Dispatch (ELD) problem, using the Path Relinking Algorithm (PR). Generally, PR is a population-based meta-heuristic technique to integrate intensification and diversification strategies in a search procedure. Also, to explore trajectories that connect elite solutions. The economic load dispatch problem is formulated as the minimization of the production cost function, expressed as a quadratic polynomial, subject to the power balance constraints and to the generation limits constraints. The proposed approach has been applied in five generators units. The comparison with the real-coded genetic algorithm (RCGAs), the binary-coded genetic algorithm (BCGAs) and the classical optimization technique of Quasi-Newton, demonstrates the superiority of the PR algorithm and confirms its potential to solve the ELD problem.

References

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Index Terms

Computer Science  Algorithms

Keywords

Economic Load Dispatch Problem, meta-heuristic optimization, Path Relinking algorithm.