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International Journal of Computer Applications

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Number 1 - Article 1

Year of Publication: 2011

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10.5120/3951-5576

{bibtex}pxc3875576.bib{/bibtex}

Abstract

This paper presents a newly developed optimization approach involving a modified shuffled frog leaping algorithm (MSFLA) applied for the solution of the economic emission load dispatch (EELD) problem. The approach utilizes the local search strategies for searching global solution. MSFLA is developed on the same frame work of shuffled frog leaping algorithm (SFLA). In this

proposed algorithm, a search-acceleration parameter is introduced. To obtain the best compromising solution a pareto-optimal decision making approach is applied to a standard IEEE 30-bus six generator test system. The results confirm the potential and effectiveness of the proposed algorithm compared to various methods performed. The quality and usefulness of the proposed algorithm are demonstrated through its application to a standard test system in comparison with the other existing techniques. The current proposal was found to be better than, or at least comparable to them considering the quality of the solutions obtained. The MSFLA algorithm appears to be a robust and reliable optimization algorithm for the solution of the power system problems.

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Computer Science

Index Terms

Power Systems

Key words

Economic emission load dispatch
algorithm
algorithm
multi-objective optimization

modified shuffled frog leaping
memetic

