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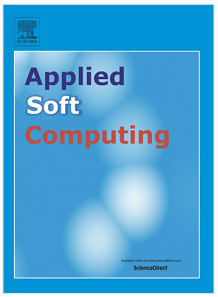

Modified differential evolution approach for practical optimal reactive power dispatch of hybrid AC−DC power systems

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Highlights

- A modified differential evolution technique is applied to solve the reactive power dispatch problem for power networks integrating HVDC systems.
- To the best of the author's knowledge, this problem has not previously been addressed with the differential evolution algorithm.
- The problem was formulated as mixed-integer nonlinear programming problem, involving a combination of continuous and discrete variables.
- The proposed approach has been tested on the modified New England 39−bus test system, and the practical and large-scale Algerian 114−bus electric network including HVDC lines.
- Simulation results confirm the potential of the proposed approach in terms of robustness, solution quality and reliability.