

Hybrid mean variance mapping optimization for dynamic economic dispatch with valve point effects

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Abstract

This paper proposes hybrid variant mean variance mapping optimization technique (MVMO-SH) for solving dynamic economic load dispatch problem (DED) in power systems. MVMO-SH has less number of control parameters to be tuned which makes it easier to solve non-convex problems. The effectiveness of the proposed technique has been verified on four different case studies to solve the DED problem of thermal power units for a cycle of 24 hours. The constraints taken into account are transmission losses, generation limits, ramp rate limits, valve- point loading and spinning reserve constraints. The results obtained by MVMO-SH algorithm have been compared with those of previously published algorithms in terms of solution quality and robustness.

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