

Simultaneous Stabilization Of Power System Using UPFC-Based Controllers

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Summary

This article studies the use of robust UPFC-based stabilizers to damp low frequency oscillations. The potential of the UPFC-based stabilizers to enhance the dynamic stability is evaluated by singular value decomposition. Particle swarm optimization technique is used to optimize the parameters of each stabilizer, first individually, then concurrently. To ensure the robustness of the proposed stabilizers, the design process considers a wide range of operating conditions. The effectiveness of the proposed controllers is verified through several linear and nonlinear analysis techniques. These techniques prove that the coordinated design of UPFC-based stabilizers is superior over any of the individual designs.

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