

On sensitivities, residues and participations: applications to oscillatory stability analysis and control

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Abstract-

Techniques are presented for the evaluation and interpretation of eigenvalue sensitivities, in the context of the analysis and control of oscillatory stability in multimachine power systems. These techniques combine the numeric power of model analysis of state-space modals with the insight that can be obtained from transfer-function descriptions. Relationships with tools from selective model analysis (namely, participations) are stressed. Examples of applications to a detailed multimachine power system model are given.

Index Terms-

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