

Stable Tending Control of Complex Power Systems: An Example of Localized Design of Power System Stabilizers

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Abstract : The phase compensation method was proposed based on the concept of the damping torque analysis (DTA). It is a method for the design of a PSS (power system stabilizer) to suppress local-mode power oscillations in a single-machine infinite-bus power system. This paper presents the application of the phase compensation method for the design of a PSS in a multi-machine power system. The application is achieved by examining the direct damping contribution of the stabilizer to the power oscillations. By using linearized equal area criterion, a theoretical proof to the application for the PSS design is presented. Hence PSS design in the paper is an example of stable tending control by localized method.

Keywords : phase compensation method, power system small-signal stability, power system stabilizer

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