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

Authors : Wenjuan Du

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 infinitebus power system. This paper presents the application of the phase compensation method for the design of a PSS in a multimachine 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

Conference Title : ICPET 2015 : International Conference on Power Engineering and Technology

Conference Location : London, United Kingdom

Conference Dates : March 14-15, 2015