

Regional Pole Placement by Saturated Power System Stabilizers

Authors : Hisham M. Soliman, Hassan Yousef

Abstract : This manuscript presents new results on design saturated power system stabilizers (PSS) to assign system poles within a desired region for achieving good dynamic performance. The regional pole placement is accomplished against model uncertainties caused by different load conditions. The design is based on a sufficient condition in the form of linear matrix inequalities (LMI) which forces the saturated nonlinear controller to lie within the linear zone. The controller effectiveness is demonstrated on a single machine infinite bus system.

Keywords : power system stabilizer, saturated control, robust control, regional pole placement, linear matrix inequality (LMI)

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