Abstract:

The aim of study is designed of Power System Stabilizer (PSS) based on H4 approach for power system stabilization. The uncertainties in power system modeling and operations are considered at designing of H4 PSS. The bounds of power system parameters are determined over a wide range of low frequency operating conditions. These bounds are used to design a robust H4 PSS. A sample power system composed a synchronous generator connected to infinite bus through transmission line is simulated. The digital H4 PSS can achieve good performance over a wide range of operating conditions. A comparison between power system responses at variety of operating conditions using the proposed H4 PSS and Linear Quadratic Regulator LQR control have been done. H2 PSS is designed and compared with the proposed controller.

Keywords:

H4 power system stabilizer, H2! PSS, synchronous machine

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