Abstract

Robust control theory considers a fundamental and practically important issue in power system environment. It turns out that many of the simplest questions are very difficult to solve, but researchers have made considerable progress over the last twenty years. Recent techniques of robust control theory, based on convex optimization over linear matrix inequalities (LMIs) might change this. In this project, robust design of power system stabilizers is considered. A new approach is presented that utilizes recently developed techniques based on LMI for mixed $H_2/H_\infty$ design. The design is easily carried out by solving a standard LMI problem. Simulation results on a single machine infinite bus system illustrate the technique, and results are compared with Nonlinear Based Optimization approach.