High performance of excitation system for synchronous generator based on modeling analysis

Yasir Abdulhafedh Ahmed, Yousif I. M. Al-Mashhadany, Mustafa Ahmed Nayyef

Abstract:

Mathematical description of electromechanical systems operation is powerful parameter to get high performance with practical implement of the systems. This paper describes a mathematical presentation for the behavior excitation system of synchronous generator based on the optimal values of the parameters. The study of the mathematical modeling for dynamics of excitation system required the knowledge for the effect of each parameter to get the typical values provided by the manufacturer implementing. The simulation of the final model which obtained was conducted on Matlab version 2019b. The final results of simulation for the mathematical model are satisfactory, and it proves the ability of independence this model as practical implement.