Abstract

In this contribution we provide a simple and useful state estimation approach for a general class of non linear models that describe dynamic power systems. At first we show, through a small power network, that this class of systems is modeled by non linear differential-algebraic equations that we may always transform to a system of ordinary differential equations. After, we investigate a state estimator based on the EKF technique as well as the local stability analysis. High performances are illustrated through a simulation study applied on 3 and 5 buses test systems.

References


Index Terms

Computer Science
Power Systems
Keywords
Power System Dynamics  State Estimation  Extended Kalman Filter  Convergence Analysis