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# Assessment Power and Oscillation Damping Using the POD Controller and Proposed FOD Controller

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**Abstract :** Today's modern interconnected power system is highly complex in nature. In this, one of the most important requirements during the operation of the electric power system is the reliability and security. Power and frequency oscillation damping mechanism improve the reliability. Because of power system stabilizer (PSS) low speed response against of major fault such as three phase short circuit, FACTs devise that can control the network condition in very fast time, are becoming popular. However, FACTs capability can be seen in a major fault present when nonlinear models of FACTs devise and power system equipment are applied. To realize this aim, the model of multi-machine power system with FACTs controller is developed in MATLAB/SIMULINK using Sim Power System (SPS) blockiest. Among the FACTs device, Static synchronous series compensator (SSSC) due to high speed changes its reactance characteristic inductive to capacitive, is effective power flow controller. Tuning process of controller parameter can be performed using different method. However, Genetic Algorithm (GA) ability tends to use it in controller parameter tuning process. In this paper, firstly POD controller is used to power oscillation damping. But in this station, frequency oscillation dos not has proper damping situation. Therefore, FOD controller that is tuned using GA is using that cause to damp out frequency oscillation properly and power oscillation damping has suitable situation.

**Keywords :** power oscillation damping (POD), frequency oscillation damping (FOD), Static synchronous series compensator (SSSC), Genetic Algorithm (GA)
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