



Application of DSP DWT and Genetic Algorithm based fault Classification of Transmission system and restoration of uninterrupted power supply

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Abstract: *Optimal supplementary damping controller design for Thyristor Controlled Series Compensator (TCSC) is presented in this paper. For the proposed controller design, a multi-objective fitness function consisting of both damping factors and real part of system electromechanically eigenvalue is used and genetic algorithm is employed for the optimal supplementary controller parameters. The performance of the designed supplementary TCSC-based damping controller is tested on a weakly connected power system with different disturbances and loading conditions with parameter variations. Simulation results are presented and compared with a conventional power system stabilizer and also with the TCSC-based supplementary controller when the controller parameters are not optimized to show the effectiveness and robustness of the proposed approach over a wide range of loading conditions and disturbances*