



International Journal on Recent Researches In Science, Engineering & Technology

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ISSN (Print) : 2347-6729

ISSN (Online) : 2348-3105

Volume 2, Issue 6,

June 2014

DIIF IF :1.46

SJIF IF: 1.329

Application of Power System Stabilizers for damping inter area

N . Albert Singh

Abstract - Literature review revealed that power system stabilizers (PSS) are used to generate supplementary control signals for the excitation system in order to damp the low frequency power system oscillations .To overcome the drawbacks of conventional PSS (CPSS) , numerous techniques have been reposed in the literature. Based on the analysis of existing techniques, this paper presents the stabilization of multi- machine owner system based on coordinated Adaptive Hierarchical Neuro Fuzzy network based power system stabilizer (AHNFPSS) design . The proposed system consists of a Hierarchical neuro fuzzy controller, which is used to generate a supplementary control signal to the excitation system . the proposed method has the features of a simple structure, adaptively and fast response. The proposed controller is evaluated on a multi-machine power system under different operating conditions and disturbances to demonstrate its effectiveness and robustness. Eigen value analysis show that the undamped modes are sensitive to excitation control while speed governors have little influence on damping .