PSS and SVC Controller Design by BFA to Enhance the Power System Stability

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Abstract : Designing of PSS and SVC controller based on Bacterial Foraging Algorithm (BFA) to improve the stability of power system is proposed in this paper. Same controllers for PSS and SVC has been considered and Single machine infinite bus (SMIB) system with SVC located at the terminal of generator is used to evaluate the proposed controllers. BFA is used to optimize the coefficients of the controllers. Finally simulation for a special disturbance as an input power of generator with the proposed controllers in order to investigate the dynamic behavior of generator is done. The simulation results demonstrate that the system composed with optimized controllers has an outstanding operation in fast damping of oscillations of power system.