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| **Title:** | Performance Analysis of Load Frequency Control for Power Plants Using Different Optimization Techniques | | |
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| **Abstract:** |  |
| In this paper, several optimization techniques including the Particle Swarm Optimization (PSO) technique, the Genetic Algorithm (GA), and the Adaptive Neuro-Fuzzy Inference System (ANFIS) are applied to determine the most efficient output for load frequency control. These optimization techniques analyze the optimal level of system performance. The goal of this paper is to identify the most effective optimization technique for this sophisticated LFC system. In this research, three strategies (PSO, GA, ANFIS) are used in the LFC system to analyze frequency fluctuation and compare the load change rate. The model consists of the transfer function of the governor, turbine, rotating mass, and load. In this analysis, the ideal performance is examined across three separate case scenarios. The MATLAB/SIMULINK software simulates the performance analysis, which offers more realistic data and is generally preferred in this sort of optimization strategy work. | |