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Optimization of Load Frequency Controller by using Genetic Algorithm

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Abstract: In this proposal method, the system will be optimized by using genetic algorithm GA with PID controller. The load frequency controller LFC had drawback likes overshoot, and undershoot with high oscillation. Hence, the hybrid algorithm between GA and PID are applied to enhance the system by matlab Simulink with toolbox. The simulation results showed that the system more efficient.

Keywords: LFC, GA, PID controller, Matlab

Introduction

Recently, many researchers suggested researches on the LFC to decrease the undershoot and decrease the settling time [1][2] [3].

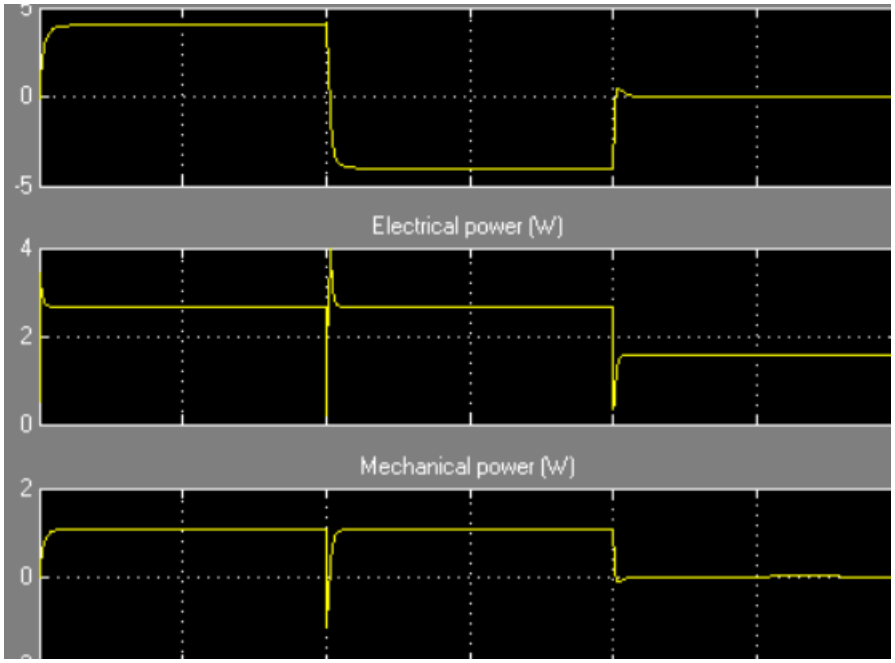
Others proposed new approach to modify the LFC performance by artificial intelligent [4] [5] [6]. But still the system of LFC had many drawbacks because of the oscillation of system at staring time [8][9] [10]

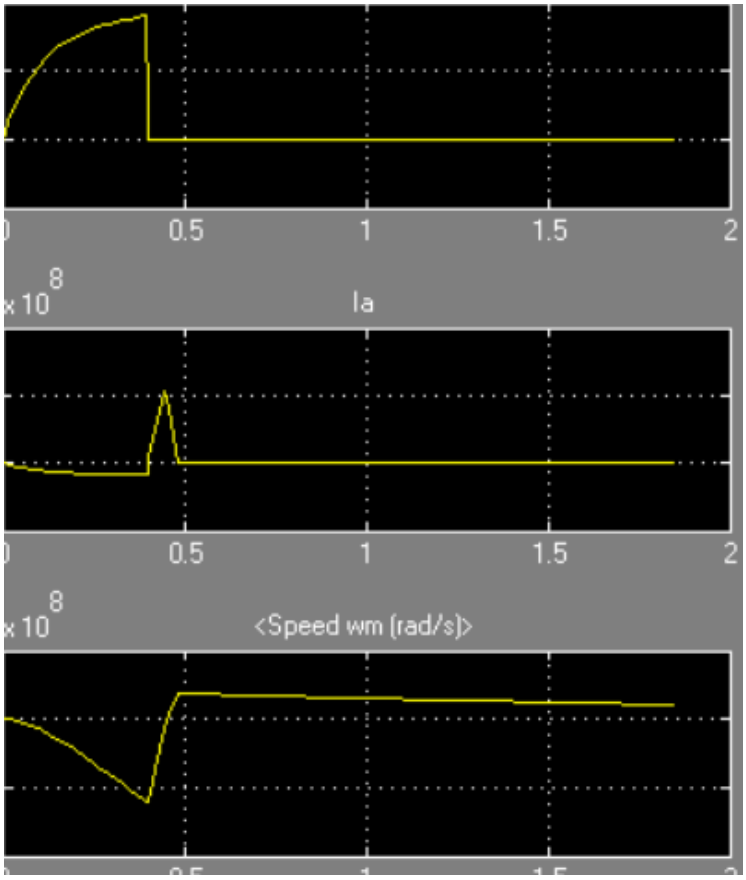
However, for great power systems with intersected parts, LFC is imperative to save the system regularity and to the programmed values as probable. The input power

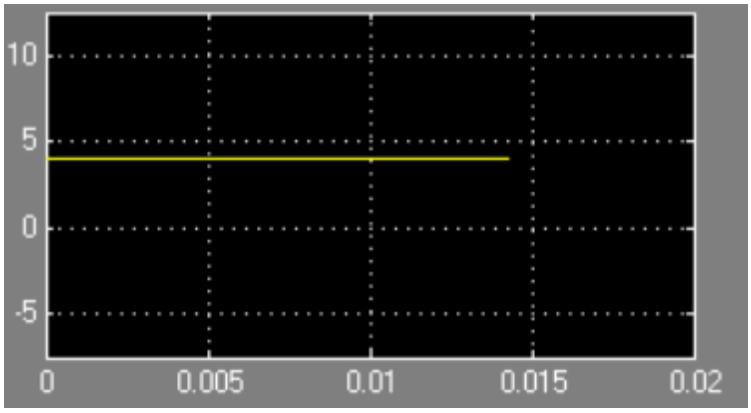
system to generators is applied to optimize the output electrical frequency with continue the power conversation to deliver satisfactory high quality while keeping limited voltage and frequency [11][12].

Simulation Results

PID controller with genetic algorithm are used for LFC to enhance the efficiency of power system station to adjust and regulate frequency and voltage at starting load. The simulation of proposed LFC are shown in figures 1, 2 and 3 respectively.







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