Abstract

The Proportional Integral Derivative Controllers have dominated the industries for nearly a century owing to their simplicity, flexibility and efficiency. The demand for developing new algorithms for designing these controllers to cope up with the complexities of the constantly evolving industries have turned the attention of the designers towards evolutionary algorithms like Simulated Annealing (SA). This paper compares the tuning of the PID controllers using SA and traditional methods. The results obtained reflect that using SA tuned controllers improve the performance of the process in terms of time domain and frequency domain specifications. Further the disturbance rejection as well as set-point tracking is being improved with a considerable enhancement in stability of the process.

Reference
Design of Controller using Simulated Annealing for a Real Time Process

- Pierpaolo Caricato and Antonio Grieco, “Using simulated annealing to design a material handling system”, IEEE intelligent systems, 2005.

Index Terms

Computer Science
Automation and Control
**Key words**

PID tuning  
Modeling  

Process Control  
Evolutionary algorithm  
SA