

# Ziegler-Nichols-Based Intelligent Fuzzy PID Controller Design for Antenna Tracking System

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## Abstract

This research is to augment the intelligent fuzzy controller with two kinds of traditional Ziegler-Nichols-based PID controller for an antenna tracking system design. The nonlinear parameter variation effect, such as gimbal angle hysteresis, is also taken into consideration. One can see that the system performances obtained by augmenting the intelligent fuzzy controller with Ziegler-Nichols-based method, especially the first type were quite better than the traditional ones.

Keyword: Antenna tracking system, hysteresis effect, intelligent fuzzy PID controller, Ziegler-Nichols-based PID controller