Abstract

This paper presents a control strategy that combines the predictive controller and neuro-fuzzy controller type of ANFIS. An Adaptive Network based Fuzzy Interference System architecture extended to cope with multivariable systems has been used. The neuro-fuzzy controller and predictive controller are works parallel. This controller adjusts the output of the predictive controller, in order to enhance the predicted inputs. The performance of the control strategy is studied on the control of Distillation Column problem. The results confirmed the control quality improvement with MPC and multi-loop PID controller.

Reference

- Engin, S. N., and Gulez, K. “A Wavelet Transform – Artificial Neural Networks (WT-ANN)
based Rotating Machinery Fault Diagnostics Methodology”, IEEE NSIP’ 99, Falez Hotel, Antalya, Turkey, 1-3 June 1999

**Index Terms**

Computer Science  
Evolutionary Computation

**Key words**

ANFIS  
Neural modeling

MPC  
Distillation Column
PID controller