Abstract

This paper deals with the application of two computer based model predictive control algorithms to a complex process. This process is a fluid catalytic cracking unit (FCC). The FCC model used for this study is inspired from Lee and Skogestad. The algorithms used are quadratic dynamic matrix control (QDMC) and observer base model predictive control (OBMPC).

A disturbance rejection is tested by introducing some change in the feed rate. Despite the important nonlinearities of the FCC, the two linear model predictive control algorithms are able to maintain a smooth multivariable control of the plant, while taking into account the constraints.

But, OBMPC algorithm is more efficient in following the set points even in the present of disturbances than QDMC algorithm.

References

Observer based and Quadratic Dynamic Matrix Control of a Fluid Catalytic Cracking Unit: A Comparison Study


Index Terms

Computer Science
Applied Sciences
Keywords

simulation  constraint  Observer  fluid catalytic