

## **Disturbance Observer-Based Predictive Functional Critical Control of a Table Drive System**

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**Abstract :** This paper addresses a control system design for a table drive system based on the disturbance observer (DOB)-based predictive functional critical control (PFCC). To empower the previously developed DOB-based PFC to handle constraints on controlled outputs, we propose to take a critical control approach. To this end, we derive the transfer function representation of the PFC controller, and yield a detailed design procedure. The effectiveness of the proposed method is confirmed through an experimental evaluation.

**Keywords :** critical control, disturbance observer, mechatronics, motion control, predictive functional control, table drive systems

**Conference Title :** ICAM 2014 : International Conference on Automation and Mechatronics

**Conference Location :** Melbourne, Australia

**Conference Dates :** December 16-17, 2014