Step Response Based Identification of Hammerstein Models: Application to Mach number Drift in an Intermittent Wind Tunnel

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Abstract

This study first proposes using the Hammerstein model to characterize the Mach number drift in an intermittent wind tunnel. To guarantee system safety, a new identification method based on multiple step response data is developed to estimate the Hammerstein model parameters. The practical wind tunnel test illustrates the identified Hammerstein model can describe the Mach number drift with high precision.

About the Speaker

ZHANG Jian received the B.S. degree in automation and the M.S. degree in control theory and control engineering from Northeastern University, Shenyang, China, in 2013 and 2015, respectively. He is currently a Ph.D. candidate in the Department of System Engineering and Engineering Management at the City University of Hong Kong. His research interests include nonlinear system identification, nonlinear model predictive control and flow field control in large-scale wind tunnels.
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