Synthesis of Nonlinear Model Predictive Controllers for Chaotic Systems
Lianjun Bai, Daniel Coca
University of Sheffield, Sheffield, UK
d.coca@sheffield.ac.uk

This paper proposes a novel nonlinear predictive controller synthesis method for controlling chaotic systems. In this approach the nonlinear multi-step-ahead predictors are identified directly from experimental data so that the model of the chaotic system does not need to be known in advance. The proposed is computationally efficient and can deal effectively with noisy measurements. Numerical simulations are used to demonstrate the performance of the proposed approach.

Key Words: Nonlinear Predictive Control, Chaotic systems, Nonlinear System Identification