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Abstract

Data-Driven control overcomes the dependence of model for synthesis using any learning method or identification technique. It is known that Koopman operator can represent the behavior of a nonlinear system using observables. A finite approximation based on data of the composition operator can be achieved using the EDMD algorithm with a given dictionary. We propose a moving horizon estimation and an MPC algorithm based on EDMD on-line. With this method, we have a better approximation of the system in each sampling time, and we can do state estimation and control in real-time. Additionally, we present a sub-optimal strategy based on off-line SVD which reduces the computational burden with minimal degradation on performance. We test the proposed method by numerical examples.

Index Terms

word 1, word 2.

I. Introduction

II. Review

III. Methods

IV. Results

V. Discussion

VI. Conclusions

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