An Effective Mixed LMI-Based Model Reduction Method

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Abstract:

In this paper, by combining two common and effective Linear Matrix Inequality based model reduction methods, a simple and more effective method to determine the reduced-order system with lower errors is obtained. When at least one of the Hankel singular values σ_i corresponding to the eliminated states is significantly higher compared to the other values or the values are not close, the proposed model provides a response closer to the original system. This pre-requisition is considered present otherwise, the combined method responds similar to the other two methods.

Keywords:

Model Reduction, Linear Matrix Inequality.