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A NEW APPROACH FOR ORDER REDUCTION OF INTERVAL SYSTEMS USING POLE CLUSTERING TECHNIQUE

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Abstract

This paper is aimed at developing a novel order reduction procedure technique for the reduction of a class of high order interval systems. Reduced order models are often required in the analysis and synthesis of high order complex systems. Very recently the research is focused on order reduction techniques for high order interval systems for stability analysis and design. Since most of the practical systems are to be modeled as interval systems, necessity of analysis of interval systems has obviously gained importance. In this paper, a procedure for order reduction of a class of high order interval systems is presented. The proposed procedure is based on application of Pole Clustering technique and the reduction method is computationally simple and also stability preserving. The new procedure is illustrated through typical numerical example to show its flexibility.

Keywords: order reduction, interval systems, pole clustering