Abstract

Reducing the order of higher order systems by mixed approach is Improved Pade-Pole clustering based method to derive a reduced order approximation for a stable continuous time system is presented. In this method, the denominator polynomial of the reduced order model is derive by improved pole-clustering approach and the numerator polynomial are obtain through Padé approximation technique and by parameter optimization by minimizing the mean square error between the time responses of the original and reduced system element through genetic algorithm. The reduced order model so obtained by improved clustering algorithm guaranteed the stability in the reduced model.

References

Improved Pade-Pole Clustering Approach using Genetic Algorithm for Model Order Reduction

Applications in Electrical Engineering, Roorkee, India, Feb. 21–23, pp. 455–459.
- Shieh LS and Wei YJ (1975), "A mixed method for multivariate system reduction".
Improved Pade-Pole Clustering Approach using Genetic Algorithm for Model Order Reduction

Index Terms

Computer Science

Algorithms

Keywords

Padé approximation  Improved Pole clustering  Dominant pole  IDM  Mean Square Error  Genetic Algorithm