短文

广义二阶动力学系统的鲁棒极点配置

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摘要
This paper considers the eigenvalue assignment with minimum sensitivity in descriptor second-order dynamical systems via proportional plus derivative state feedback. Based on a result for eigenvalue sensitivities and a complete parametric eigenstructure assignment approach, the robust pole assignment problem is converted into an independent minimization problem. The closed-loop eigenvalues may be easily taken as a part of the design parameters and optimized within certain desired fields on the complex plane to improve robustness. An example is worked out. Both the indices and the numerical robustness test demonstrate the effect of the proposed approach.
关键词　 Descriptor second-order dynamical systems　 eigenstructure assignment　 eigenvalue sensitivities　 robust pole assignment
分类号

Robust Pole Assignment in Descriptor Second-order Dynamical Systems

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Abstract
This paper considers the eigenvalue assignment with minimum sensitivity in descriptor second-order dynamical systems via proportional plus derivative state feedback. Based on a result for eigenvalue sensitivities and a complete parametric eigenstructure assignment approach, the robust pole assignment problem is converted into an independent minimization problem. The closed-loop eigenvalues may be easily taken as a part of the design parameters and optimized within certain desired fields on the complex plane to improve robustness. An example is worked out. Both the indices and the numerical robustness test demonstrate the effect of the proposed approach.
Key words　 Descriptor second-order dynamical systems　 eigenstructure assignment　 eigenvalue sensitivities　 robust pole assignment

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