

论文与报告

含结构参数扰动的线性连续系统的鲁棒约束方差控制

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摘要

考虑含结构参数扰动的线性连续随机系统的鲁棒约束方差控制设计问题, 即寻找状态反馈控制器, 使受扰系统不仅具有期望的稳定裕度, 而且其每个状态分量的稳态方差不大于各自预先给定的上界. 给出了具有这种性能的鲁棒控制器的存在条件及解析表达式, 并以数值例子说明文中设计方法的直接性与有效性.

关键词 [线性连续随机系统](#) [参数扰动](#) [约束方差控制](#) [鲁棒控制](#)

分类号

Robust Constrained Variance Control for Linear Continuous Systems with Structured Parameter Perturbation

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Abstract

In this paper the problem of robust constrained variance control for linear continuous stochastic systems with structured parameter perturbation is considered. The purpose of this problem is to find the state feedback controllers such that the perturbed systems have the expected stability margin, and the steady-state variance for each state is not more than the prespecified value, simultaneously. The conditions for the existence of the performance robust controllers are given and the explicit expression is also provided. A numerical example is presented to show the directness and effectiveness of the design method.

Key words [Linear continuous stochastic systems](#) [parameter perturbation](#) [onstrained variance control](#) [robust control](#)

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