

论文与报告

分布时滞系统的反馈镇定

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摘要

求解特征矩阵是镇定时滞系统的关键问题,本文给出了系统的特征根的代数重复度与几何重复度均为一般值情况下特征矩阵的求法,即把它归结为求解一组线性代数方程的问题,并得到了该方程组有解及对应于同一特征值的解向量组线性独立的充分条件.此外,还提出了一种算法,用以处理系统对应于不同特征值的左特征向量线性相关情况下系统的镇定问题.

关键词 [时滞系统](#) [镇定](#) [特征矩阵](#)

分类号

Feedback Stabilization of Linear Systems with Distributed Delays in State and Control Variable

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Abstract

Solving characteristic matrix equation (CME) of a linear retarded system is a key problem for stabilizing the system by use of reduction technique. This paper gives the solution of CME under the general condition that the eigenvalues occur in the spectrum of the system with algebraic and geometric multiplicities being greater than or equal to one. The main idea is to transform CME into a group of linear algebraic equations (LAE). The sufficient conditions for the existence of the solution of LAE and for the independence of the solution vectors of LAE corresponding to a given eigenvalue are established. When the left eigenvectors of the system corresponding to different eigenvalues are linearly dependent, an algorithm for dealing with the stabilization problem is presented.

Key words [Retarded system](#) [feedback stabilization](#) [characteristic matrix equation](#)

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