

论文与报告

## 延时系统输入状态稳定性的Lyapunov逆理论

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摘要

研究了延时系统输入状态稳定性的局部Lipschitz连续的Lyapunov逆理论. 针对含有任意可测局部本质有界扰动的延时系统, 一个局部Lipschitz连续的Lyapunov泛函被证实是存在的, 如果该系统是鲁棒渐进稳定的. 根据该结论, 延时系统输入状态稳定性的Lyapunov特征被进一步得到.

关键词 [输入状态稳定性](#) [Lyapunov逆理论](#) [延时系统](#) [局部Lipschitz](#) [Lyapunov泛函](#)

分类号

## Converse Lyapunov Theorem of Input-to-State Stability for Time-delay Systems

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Abstract

This paper is concerned with locally Lipschitz continuous converse Lyapunov theorem of input-to-state stability for time-delay systems. For time-delay systems with arbitrary measurable locally essentially bounded disturbances, it is shown that a locally Lipschitz continuous Lyapunov functional exists if these systems are robustly asymptotically stable. Under this result, the Lyapunov characterizations of input-to-state stability for time-delay systems are obtained.

Key words [Input-to-state stability \(ISS\)](#) [converse Lyapunov theorem](#) [time-delay system](#) [locally Lipschitz](#) [Lyapunov functional](#)

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