论文与报告

基于逆系统方法的非线性内模控制

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摘要
针对一类非线性连续系统,利用小波网络逼近原系统的α阶积分逆系统,针对复合后的伪线性系统提出了基于逆系统方法的内模控制,证明了闭环系统的鲁棒稳定性,分析了系统性能. 仿真结果表明所提的方法控制性能好, 精度高, 且控制器设计简单.

关键词　　非线性　逆系统方法　内模控制　鲁棒性　小波网络

分类号

Nonlinear Internal Model Control Based on Inverse System Method

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Abstract
Wavelet networks are used to approximate to the a-integral inverse system of a class of nonlinear continuous systems. Then the internal model control based on inverse system method is proposed for the combined pseudo-linear system. Stability and robustness of the closed-loop system are proved, and its performances are analyzed. Simulation results show that the method has better performance, high accuracy and simple design.

Key words　Nonlinear　inverse system method　IMC　robustness　wavelet networks

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