Journal of Systems Science and Complexity 1988 1 (1): 057-071 ISSN: 1000-0577 CN: 11-2019/O1

论文

ROBUST STOCHASTIC ADAPTIVE CONTROL FOR NON-MINIMUM PHASE SYSTEMS

Guo Lei(1), Chen Hanfu(2)

(1)Department of Systems Engineering, Research School of Physical Sciences, Australian National University,Canberra,Australia; (2)Institute of Systems Science, Academia Sinica, Beijing, China

收稿日期 修回日期 网络版发布日期 接受日期

摘要 The adaptive control problem for stochastic systems with unmodelled dynamics is considered. The modelled part of the system is described by an ARMAX model which may not be of minimum phase, while the unmodelled part is dominated by a time-varying quantitydepending upon the systen past input, output and driven noise. The adaptive control law is designed based on a pseudo-linear regression algorithm and a pole-assignment method. Robustness results with regard to stability, performance and convergence are established.

关键词

分类号

ROBUST STOCHASTIC ADAPTIVE CONTROL FOR NON-MINIMUM PHASE SYSTEMS

Guo Lei(1), Chen Hanfu(2)

(1)Department of Systems Engineering, Research School of Physical Sciences, Australian National University, Canberra, Australia; (2)Institute of Systems Science, Academia Sinica, Beijing, China

Abstract The adaptive control problem for stochastic systems with unmodelled dynamics is considered. The modelled part of the system is described by an ARMAX model which may not be of minimum phase, while the unmodelled part is dominated by a time-varying quantitydepending upon the systen past input, output and driven noise. The adaptive control law is designed based on a pseudo-linear regression algorithm and a pole-assignment method. Robustness results with regard to stability, performance and convergence are established.

Key words

DOI:

通讯作者