

# [2008-1252] Adaptive Dual Network Design for a Class of SIMO Systems with Nonlinear Time-variant Uncertainties

收稿日期 修回日期 网络版发布日期 2009-4-3 接受日期

摘要

关键词

分类号

## Adaptive Dual Network Design for a Class of SIMO Systems with Nonlinear Time-variant Uncertainties

Bo LIU, Haibo HE, Sheng CHEN

### Abstract

A novel adaptive dual network design consisting of a rough adjustment network (RAN) and a fine adjustment network (FAN) is proposed to eliminate the unknown time-variant uncertainties of servo system. To accomplish this objective, a RAN is proposed based on the combination of sliding mode control, function approximation and error compensation technique. Then, a FAN is proposed to compensate the tracking error. In our current design, the FAN includes a critic network based on a neural network model and a prediction network based on an online curve fitting scheme. Theoretical analysis followed by detailed design strategies are presented in this work. Simulation results and comparative study of this method with those of existing approaches demonstrate the effectiveness of the proposed adaptive dual network design for position tracking.

Key words [Adaptive control](#) [critic network](#) [sliding mode control](#) [neural network](#)

DOI:

通讯作者

作者个人主

页

### 扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF \(5593KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献\[PDF\]](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

相关信息

▶ [本刊中 无 相关文章](#)

▶ [本文作者相关文章](#)