[2009-0532] A New Delay-dependent Absolute Stability Criterion for Lurie Systems with Time-varying delay

收稿日期 修回日期 网络版发布日期 2009-11-22 接受日期 摘要

关键词

分类号

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Abstract

The problem of absolute stability analysis for Lurie systems with time-varying delay and norm-bounded parameter uncertainties is considered. By using a new Lyapunov-krasovskii functional

which splits the whole delay interval into two subintervals and defining a different energy

function on each subinterval, some new delay-dependent robust absolute stability criteria are

presented in terms of strict linear matrix inequalities (LMIs). The obtained delay-dependent

criteria are less conservative than previous ones, which are illustrated by numerical examples

Key words

<u>Lurie system</u> <u>time-varying delay</u> <u>absolute stability</u> <u>nonlinearity</u> <u>linear matrix</u> <u>inequality (LMI)</u>

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