IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 1, December 2025
Impact Factor: 7.67

Instability Analysis of Uncertain Interval Continuous-time Systems

Yeong-Jeu Sun[1], Wei-Chun Liao[2], Cheng-Fu Huang[3]
Professor, Department of Electrical Engineering[1]
Student, Department of Electrical Engineering[2,3]
I-Shou University, Kaohsiung, Taiwan

Abstract: *This paper first proposes the concepts of $S(a,b)$stability and $S(a,b)$instability. Next, for a class of uncertain interval continuous-time systems, a simple criterion for guaranteeing $S(a,b)$instability is offered. Furthermore, both parameters a and b can be quickly calculated and obtained from the upper and lower bounds of the unknown parameters of such uncertain interval continuous-time systems.Finally, several numerical simulation results are presented to demonstrate the validity and correctness of the main theorem*

Keywords: uncertain systems, interval systems, instability, continuous-time systems

DOI: 10.48175/IJARSCT-30131