

CALL FOR PAPERS

“Time-Delay Systems”

A Special Issue of Asian Journal of Control

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Motivated by new applications and newly available computational tools, we have witnessed a growing interest on time-delay systems in recent year, resulting in many significant progress, as well as new critical issues remaining to be resolved.

The issue of time delay is well known in many fields of science and engineering, including communications network, manufacturing systems, life science and economics. Time-delay systems have assumed prominent role in a number of new technologies. An example of this is network-based control system (NCS), with significant networked-induced delay effect in the control loop. Such delays are known to significantly degrade the control performance or even destabilize the systems. These new applications brought to the forefront a number of new challenging theoretical and numerical problems in this area.

One example is systems with large delay, including those that are unstable if the delay is set to zero. Obviously, many approaches based on more traditional delay-independent and delay-dependent concepts do not apply to such problems. If a time-domain approach is used, a more general form of Lyapunov-Krasovskii functional needs to be used, which requires the solution of the corresponding numerical issues such as discretization. If the frequency domain approach is used, this requires a careful study of the delay switch and identification of crossing and reversal points as delay increases. The accommodation of uncertainties in such formulation is another interesting issue.

Another challenge is time-varying delays. This includes the analysis of periodic systems often encountered in nonlinear vibration systems, the handling of fast time-varying delays in stability analysis, and robust stability analysis of time-varying deviation from large nominal delays.

In this special issue, we would like to invite authors to address the fundamental issues in modeling, identifications, and analysis, and control design in time-delay systems. Practical applications are strongly encouraged. The relevant topics include, but not limited to:

- Stability and performance analysis
- Control design and filtering
- Numerical and implementation issues
- Applications
- New challenges motivated by new applications (such as the NCS and Congestion Control)

Authors intending to submit survey or tutorial papers are encouraged to contact a guest editor before formal submission.

Guest Editors:

Prof. Keqin Gu

Department of Mechanical and Industrial Engineering
Southern Illinois University at Edwardsville
Edwardsville, IL 62026-1805, USA
Tel: +1-618-650-2803
Fax: +1-618-650-2555
E-mail: kgu@siue.edu

Dr. Qing-Long Han

Faculty of Informatics and Communication
Central Queensland University
Rockhampton, QLD 4702, Australia
Tel: +61-7-4930-9270
Fax: +61-7-4930-9729
E-mail: q.han@cqu.edu.au

Dr. Silviu-Iulian Niculescu

HEUDIASYC (UMR CNRS 6659)
Université de Technologie de Compiègne
BP 20529, F-60205 Compiègne, Cedex, France
Tel.: +33-3- 44 23 44 84
Fax: +33-3-44 23 44 77
E-mail: silviu@hds.utc.fr

Important Dates:

Aug. 20, 2004 Call for Papers
April 15, 2005 Deadline for Paper Submission
Aug. 15, 2005 Completion of First Review
Nov. 15, 2005 Completion of Final Review
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Potential authors are strongly encouraged to upload the electronic file of their manuscript (in Postscript, PDF or WORD format) through on-line submission interface on the journal website <http://www.ajc.org.tw>. In case you encounter any submission problem, you are free to contact Prof. Li-Chen Fu, Editor-in-Chief of Asian Journal of Control at the following address:

Professor Li-Chen Fu

Department of Electrical Engineering, EE II-524
National Taiwan University

Taipei 106, Taiwan
Tel: +886-2-2362-2209
Fax: +886-2-2365-7887
E-mail: lichen@ntu.edu.tw

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