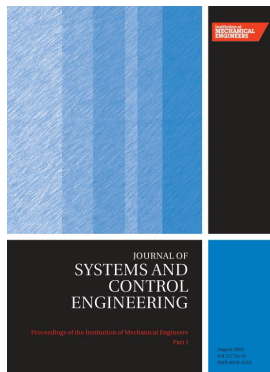


**Proceedings of the Institution of Mechanical Engineers, Part I, Journal of  
Systems and Control Engineering  
Advanced Control of Aerospace Vehicles  
--Manuscript Draft--**

<b>Manuscript Number:</b>	JSCE1639
<b>Full Title:</b>	Advanced Control of Aerospace Vehicles
<b>Article Type:</b>	Special Issue
<b>Keywords:</b>	
<b>Corresponding Author:</b>	
<b>Corresponding Author Secondary Information:</b>	
<b>Corresponding Author's Institution:</b>	
<b>Corresponding Author's Secondary Institution:</b>	
<b>First Author Secondary Information:</b>	
<b>Order of Authors Secondary Information:</b>	



SAGE Publications Ltd

1 Oliver's Yard

55 City Road

London EC1Y 1SP

Phone +44 (0)20 7324 8500

Fax +44 (0)20 7324 8600

sagepublications.com

Reg. England No 1017514

Los Angeles London New Delhi Singapore

## Special Issue on Advanced Control of Aerospace Vehicles *Proc. IMechE: Part I -- Journal of Systems and Control Engineering*

### Guest Editors

**Ligang Wu**, Harbin Institute of Technology, Harbin, P.R. China. Email: [ligangwu@hit.edu.cn](mailto:ligangwu@hit.edu.cn)

**Huijun Gao**, Harbin Institute of Technology, Harbin, P.R. China. Email: [hjgao@hit.edu.cn](mailto:hjgao@hit.edu.cn)

**James Lam**, The University of Hong Kong, Hong Kong. Email: [james.lam@hku.hk](mailto:james.lam@hku.hk)

The control of aerospace vehicles, such as manned/unmanned airplanes, hypersonic vehicles, satellites and missiles, has attracted a great deal of interest in recent years due to the rapid development of potential application areas. Modern aerospace vehicles often employ large, complex, and lightweight structures, which result in these space structures being extremely flexible and having low-frequency fundamental vibration modes. These bring challenges to traditional control and optimization methodologies. There is an urgent need to develop new optimization algorithms, control strategies, modeling techniques, decision approaches, and fault diagnosis methods. In spite of the extensive and successful development of robust  $H_2/H_\infty$  control, adaptive control and sliding mode control techniques, their capability to handle bounded uncertainties/disturbances and unmodeled dynamics in contemporary flight control systems needs to be strengthened. Meanwhile, newly developed mathematical tools and technologies have also opened up various possibilities for the practical implementation of advanced control algorithms in aerospace vehicles.

The purpose of this special issue is to create a platform for scientists, engineers and practitioners to present their latest theoretical and technological advancements in the control of aerospace vehicles. The focus of this special issue will be on advanced and non-traditional methods presenting considerable novelties in theoretical background or practical design. The solicited papers should provide original ideas and new approaches, with clear indication of the advances made in problem formulation, methodology, or application with respect to existing results. Papers presenting newly emerging fields are especially welcome.

### Scope of the Special Issue

Topics to be covered in this special issue include, but not limited to, the following:

- Modeling of aerospace vehicles (especially vehicles with engine, actuator and aerodynamic surface failure)
- Advanced control strategies (such as robust control, adaptive control and intelligent control)
- Fault detection and fault-tolerant control
- Formation control of aerospace vehicles
- Novel guidance and navigation methodologies
- Simulation techniques and tools

### Important Dates

Submission of Manuscript February 28<sup>th</sup>, 2012

Tentative Publication Date December, 2012

### Submission Instructions

Please contact the Managing Editor: [jsysconeng@sagepub.co.uk](mailto:jsysconeng@sagepub.co.uk) if you are interested in submitting your paper to this special issue. For further information about the journal please visit our website: <http://www.uk.sagepub.com/pii>.