Special Issue

Fault-Tolerant Control for Unmanned Aerial Vehicles (UAVs)

Message from the Guest Editor

Unmanned aerial vehicles (UAVs) have demonstrated their ability in various indoor/outdoor applications such as package delivery, construction monitoring, firefighting, search and rescue, etc. They are also essential in achieving Urban Air Mobility (UAM). Faults, including actuator and sensor faults, can happen during air operations, inducing loss of control in flight. Improving the resilience of UAVs under fault cases and especially during high-speed flight conditions is a central concern for future applications. Fault-tolerant control, which is capable of automatically tolerating faults while maintaining stability and desirable performance, has great potential to tackle in-flight UAV faults.

The aim of this Special Issue is to collect research progress on UAV fault-tolerant control algorithm design, implementation, and validation. Papers are welcome on topics that are related, but not limited, to:

- Unmanned aerial vehicle
- Fault-tolerant control
- Flight control system
- Fault detection and isolation
- Urban air mobility
- Actuator and sensor faults

Guest Editor

Dr. Xuerui Wang

Faculty of Aerospace Engineering, Delft University of Technology, Delft, The Netherlands

Deadline for manuscript submissions

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Actuators
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
actuators@mdpi.com

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About the Journal

Message from the Editorial Board

We are just entering the Next Wave of Technology (NWT) where actuators will play the same role as the computer chip did for computers/social media approximately four decades ago. Just in the U.S., production of $1 trillion year of electromechanical systems (vehicles, orthotics, manufacturing cells, freight trains, aircraft, etc.) will be impacted by the NWT, all driven by actuators. Five key trends can be found for the future perspectives: “Performance to Reliability”, “Hard to Soft”, “Macro to Nano”, “Homo to Hetero” and “Single to Multi functional”. We invite papers that primarily impact these economic sectors; those illustrating basic scientific principles are also welcome.

Editors-in-Chief

Prof. Dr. Kenji Uchino
Emeritus Academy Institute, The Pennsylvania State University, University Park, PA 16802, USA

Prof. Dr. Norman M. Wereley
Department of Aerospace Engineering, University of Maryland, 3179J Martin Hall, College Park, MD 20742, USA

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