

CALL FOR PAPERS



Special Session on *Stability analysis and security control of hybrid networked systems*

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Most infrastructures are indeed hybrid systems in which heterogeneous subsystems coexist and interact with each other. Identifying, understanding and protecting these critical infrastructures are crucial tasks to be pursued by the scientific community at both the academic and applied levels. As complexity and interconnectedness increase, there is a higher risk of faulty operation in one or more components/subsystems of the overall systems. Also the systems are vulnerable to malicious attacks as the interdependencies of infrastructures will increase the risk of cascade failure and cyber attacks (e.g., DoS attacks, false data injection attacks and replay attacks etc.), which forces us to rethink the control problem in light of security concerns. There is an urgent need for control algorithms that can defend cyber attacks while completing control tasks.

This special session is to report recent developments on stability analysis and resilient consensus of hybrid networked systems. It is expected to develop effective control algorithms to defend cyber attacks. Topics of interest are included but not limited to:

- Stability analysis of multi-scale dynamical systems
- Stability of hybrid networked systems
- DoS attack and defence scheduling
- Multi-sensor fusion for attack detection
- Secure control for networked control systems
- Secure control for multi-agent systems under attacks
- Distributed tracking control under malicious attacks
- Distributed resilient event-triggered filtering
- Distributed resilient event-triggered control
- Resilient control under open network environments
- Signal restriction and estimation under uncertain security attacks

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IMPORTANT DATE

**Deadline for submission of special session
papers**

May 1, 2018

Notification of acceptance

July 15, 2018

**Deadline for submission of final
manuscripts**

September 7, 2018

IEEE IES Technical Committee Sponsoring the Special Session:

The IES Technical Committee on Network-Based Control Systems and Applications

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