

Invited Sessions

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Session title: Control, Simulation and Condition Monitoring for Airborne Electromechanical Systems of Vehicle

Abstract: This special session mainly deals with the latest advances and outcomes in control, simulation and condition monitoring for airborne electro-mechanical system of vehicle, and provides a platform to communicate and discuss the research results. The airborne electro-mechanical system of more electric aircraft covers hydraulic system, electrical system, emergency power system, environment control system, fuel distribution system and cybernetic synthesized and managed system based on bus and computer network, it is the important system to support the reliable and safe operation of the aircraft. The safety, comfort and saving energy are its main objectives. In recent years, more electric technique, electric-hydraulic independent power transmission and control, dissimilar actuating system, variable pressure pump, electric-hydrostatic-actuator, and energy utility management have been studied and have been partly used in large type of civil aircraft. These new progresses have also created enormous areas of application and presented the new research issues for mechatronics. In an effort to disseminate current advances of various mechatronics technologies for the power transmission and energy management system of large type of civil aircraft and vehicle, an invited session will focus on:

- Mechatronics methodology in power transmission and actuating system of more electric aircraft
- Analysis, design, control, and experiment of aircraft utility system
- Condition monitoring, health management, and fault-tolerant control
- Heat analysis and temperature control in friction pair of airborne power and actuator component
- Sensor network and data fusion in aircraft utility system
- Novel actuation, transmission, and control techniques in more electric aircraft
- Motion synthesis and control for distributed actuating system
- Energy utilization and thermal management for more electric aircraft airborne electro-mechanical system

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