**Session S/I-XX:**

**Discrete-Time Control of Systems Subject to Sensor-Actuator Degradation and/or Limitations**

**Session Abstract:**

Many manufacturing, robotic, aircraft and automotive systems are subject to limited actuation authority and sensing limitations. Their corresponding control systems are typically implemented in a discrete-time manner over bandwidth-limited communication networks. The discrete-time effects are typically ignored in that the engineer assumes the system is being sampled 'fast enough' in order to assume a continuous-time model. These continuous-time assumptions allow for emerging control analysis tools to consider actuator limitations such as saturation and/or sensor degradation which includes sensor noise and bias. As a result of these continuous-time assumptions safe operating gains can only be determined at run-time in an ad-hoc manner. It is desired to consider the discrete-time sampling effects on operation of systems subject to sensor-actuator degradation and/or limitations in order to improve system resilience.

**Topics:**

Analysis, modeling and simulation, optimization, system design, motion control, robotics, [quad-rotor] aircraft, automotive, process-control, manufacturing, fault-tolerant control, back-stepping control, interconnection-damping-assignment passivity based control, fault-detection and isolation, resilient real-time platforms for control, resilient real-time networking protocols.

**Chairs:**

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**Authors’ Schedule:**

* Paper submission deadline: **April 4, 2011**
* Notification of acceptance: **June 6, 2011**

**Submission of Papers:**

Papers must be submitted electronically through the electronic submission system.  
For further details please consult the conference web pages for the paper template.