

# RESILIENCE CONTROLS IN THE FIELD

THURSDAY: SESSION 3, TRACK 1

## SESSION CHAIRS

---

- Kevin Schultz (Johns Hopkins University Applied Physics Laboratory)
- Kris Vellez (Oak Ridge National Laboratory)
- Quanyan Zhu (New York University)

## SESSION ABSTRACT

---

Many contributions to the field of resilient controls, including both design of automation tools for increased system resilience and increasing resilience of automation systems themselves, have remained at the theoretical or proof-of-concept level. This session aims to highlight recent advances in the use of resilient controls in real-world applications. Special attention is given to challenges highlighted through practical benchmarks and field tests.

## TOPICS

---

- **Increased System Resilience through Monitoring, Diagnostics, Prognostics, and Control:** Advanced process monitoring and control systems allow the use of automated actions and interventions to mitigate the impact of future, ongoing, and past adverse events, thus increasing the resilience of the controlled systems. We seek contributions that identify and quantify the relative contribution of monitoring, diagnostic, prognostic, and control tools to system resilience in practical cases.
- **Practical Implementation of Resilient Control Systems:** As automated systems are vulnerable to random and adverse events, special attention has been given to the foundational aspects of resilient control systems, i.e., control systems that are robust to adverse events yet also exhibit quick recovery from degraded performance. However, reports on practical implementation and field tests are missing. For this reason, we invite contributions that highlight practical hindrances to and solutions for resilient control systems in real-world applications.