First Announcement and Call for Papers and Contributions
The International Symposium on Advances in Automotive Control (AAC) of the International Federation of Automatic Control (IFAC) takes place every three years. The objective of the IFAC - AAC Symposium is to contribute to future research and development through active exchange between industry and academia.

Following the previous successful symposiums in Ascona, Mohican State Park, Karlsruhe, Salerno, Monterey, Munich, Tokyo, Kolmården and Orléans, the 10th AAC symposium will be held at The Ohio State University in Columbus, Ohio, USA.

Welcome Reception   Sunday, August 28, 2022
Symposium                 Monday, August 29 – Wednesday, August 31, 2022

Submission Deadlines and Time Plan
Prospective authors are requested to submit their contributions as a PDF file in IFAC paper format through the IFAC Paperplaza conference manuscript management system, http://ifac.papercept.net/conferences/scripts/start.pl. The templates for manuscripts are available on the website and the deadlines for submissions are shown below.

• Draft paper submission open: Nov. 29, 2021
• Draft paper submission ends: Feb. 14, 2022
• Acceptance notification: April 1, 2022
• Final papers: May 1, 2022
• Opening registration: March 1, 2022
• Draft program: May 10, 2022
• Fee increase: May 13, 2022
• Final program: June 15, 2022

About the Venue
The symposium will be held in Columbus, Ohio on the campus of The Ohio State University. Columbus is the largest city in Ohio and the fastest-growing city in the Midwest, with a vibrant blend of arts and culture; inspired culinary, fashion, music and entertainment scenes; exciting collegiate and professional sports; and an open, entrepreneurial spirit. With a burgeoning downtown, lively urban districts and a diverse array of welcoming neighborhoods, it’s a city that invites exploration.

Additional conference information can be found at car.osu.edu/aac2022
Scope of the Symposium
The symposium will cover a wide range of topics in advanced automotive control systems including, but not limited to:

Vehicle Autonomy and Connectivity
- Control, guidance and navigation of autonomous vehicles
- Perception, localization and path planning
- ML/AI for vehicle autonomy
- Simultaneous localization and mapping
- V2X communications
- Intelligent transportation systems
- Vehicle dynamics, control and state estimation
- Testing and validation
- Gas exchange processes, turbocharging, supercharging, variable valve technology
- Model-based diagnostics
- Dual fuel control, bio-fuels or bio-gas alternatives
- Transmissions, brakes, steering, suspension systems

Vehicle Security and Safety
- Advanced Driver Assist Systems
- Health monitoring of ADAS systems, powertrain and its components
- Vehicle cybersecurity for safety and privacy
- Position, navigation and timing safety and security in automotive systems
- AI/ML and model based approaches for safety and security in automotive systems
- Safety of the intended functionality
- Functional safety

Traditional Powertrain Systems
- Powertrain modeling and control
- Combustion modeling and control: spark ignition, compression ignition, low temperature combustion
- Exhaust gas after-treatment: catalyst and DPF models, thermal management, SCR control, regeneration control
- Gas exchange processes, turbocharging, supercharging, variable valve technology
- Model-based diagnostics
- Dual fuel control, bio-fuels or bio-gas alternatives
- Transmissions, brakes, steering, suspension systems

Electrified Powertrain Systems
- Vehicle architecture for XEV
- Optimal design and control of XEV
- Energy management for XEV
- Modeling and control for electric and electro-magnetic components
- Energy storage systems: electrochemical systems, supercapacitors, fuel cells
- Energy storage system modeling
- Charging and refueling infrastructure
- Battery management systems
- Battery thermal management systems

Smart Mobility
- AI/ML application to automotive and transportation systems
- Cyber-physical transportation systems
- Driver-in-the-loop and driver assistance systems
- Single and multi-vehicle planning and coordination
- Modeling and optimization of ride-share and multi-mode transportation systems
- Freight system management and optimization

Planning Committee
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