

ARCAI 2024 Special Session “Dynamics and Control of Aeronautic and Astronautic Robots”

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Call for Papers:

In recent years, the field of robots has experienced significant advancements, revolutionizing industries and shaping the future of technology. The aeronautic and astronautic robot technology used in unmanned aerial vehicles, aircraft, missiles, satellites, etc., as an important and advanced class of robots, especially require a more precious and efficient dynamics model and more flexible and intelligent control performance. Meanwhile, a high-precision and high-efficiency dynamic model can benefit the control precision. Moreover, advanced control methods such as those with adaptive or learning algorithms, new developments in sensing devices, etc., will both provide more possibilities for the robots' practical applications. Therefore, it is imperative to explore developments of dynamics modeling and control methods for complex robotic systems by integrating relevant knowledge from various disciplines such as mathematics, mechanics, automation, informatics, computer science, etc.

This special session aims to provide a platform for researchers, engineers, and industry professionals to share research findings and discuss the latest advancements in robot dynamics and control methods and their aeronautic and astronautic applications. Researchers in related fields are invited to present the above problems and explore major research challenges and development opportunities in this emerging area.

Authors are encouraged to submit their original contributions demonstrating the dynamics and control of aeronautic and astronautic robot systems. Potential topics include but are not limited to the following:

- Kinematic and dynamic models
- Control theory and application
- Navigation, guidance and control
- Motion planning
- Space robot technology
- Artificial intelligence and robots

Accepted and presented papers will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore's scope and quality requirements and indexed by EI Compendex and Scopus. Selected papers will be invited to SCI Journal Special Issues.