

LC2018 Symposium
**Future Large Aperture Space Telescopes: On-orbit Assembly based on
Robotics and AI**

Symposium Co-Chairs:

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Symposium abstract: Large aperture space telescopes (>10m) are key to address scientific demand on searching for light from the first stars and galaxies that were formed in the universe after the Big Bang, understanding the formation and evolution of stars and galaxies. However, limits in contemporary launch vehicle fairing put constraints to launching these systems as a monolithic structure from Earth. The consensus in the broader space community is to assemble such large space structure on orbit in space from modular elements, using robotics and AI techniques. This symposium will present latest R&D work on technologies and techniques that can help achieve on-orbit assembly and operation of future space telescopes.



Short Bio:

Yang Gao, FIET FRAeS, is a Professor of Space Autonomous Systems within Surrey Space Centre at the University of Surrey, United Kingdom. She is also the Hub Director of Future AI and Robotics for Space (FAIR-SPACE), a UK National Centre of Research Excellence in space robotics and autonomous systems. Prof Gao specializes in robotic vision, machine learning and biomimetics for spacecraft GNC and mechanisms. She brings nearly 20 years of R&D experience in solving robotic system problems, and is actively involved in development of real-world space missions like ESA's ExoMars, Proba3, LUCE-Ice Mapper, UK's MoonLITE/Moonraker and China's Chang'E3.



Rob Buckingham FIET FREng, is a Director of the UK Atomic Energy Authority (UKAEA) and the first Head of RACE, the new centre for Remote Applications in Challenging Environments. Rob was a lead author of the UK's Robotics and Autonomous Systems Strategy. Before joining the UKAEA, Rob co-founded and was Managing Director of OC Robotics which developed and commercialized snake-arm robots. He is a Fellow of the Royal Academy of Engineering and a Fellow of the Institute

of Engineering and Technology.