



POLITECNICO
MILANO 1863

THEMIS

Tracking the Health of the Environment and Missions in Space

THEMIS is the ESA operational software for “Tracking the Health of the Environment and Missions in Space”. THEMIS was conceived to assess the impact of a space mission on the space environment, and to determine the share of the capacity of Space used by the mission under analysis. It also allows calculating the overall share of the Space capacity used by spacecraft in orbit and analysing possible definitions of the capacity of orbital Space and what its threshold should be.

Want to know more about the approach?

Do you want to become a BETA tester for the THEMIS software?
Only 30 places are available! Hurry up!



themis@polimi.it



EUCASS 2025, Rome, Italy

EUCASS 2025, Rome, Italy | SAVE THE DATE



The banner features a blue background with a white and orange diagonal design. On the left, there is a small image of the Colosseum in Rome. The EUCASS logo is on the far left, and the text '20th Anniversary' is positioned above the Colosseum image. The main text on the right side of the banner provides the event name, dates, and location.

eucass  20th Anniversary

eucass 2025
11th European Conference for AeroSpace Sciences
30 June - 4 July 2025 | Rome | Italy

Call for papers now open!

Submission guidelines are on the official event website

EUCASS: SUSTAINABLE SPACE Logistics and Space Debris

This symposium SUSTSP addresses space sustainability and logistics, integrating several topics to have a holistic approach to support a sustainable European space industry. We should consider in-space sustainability and the impact of space activities on the earth's and space debris environment. The symposium will also consider the transformation towards a space circle economy and space debris remediation.

Impact of space activities on the space and earth environment and circular economy

- Eco-design and life cycle engineering,
- Life cycle cost and value, atmospheric pollution (i.e. launcher emissions, re-entry)
- Environmental impact of the launch phase
- Strategies for minimising environmental footprints in space missions and technologies
- In-orbit manufacturing and assembly
- Circular economy initiatives
- Space logistics

Space debris and long-term sustainability

- Long-term space debris modelling and risk analysis
- Space debris indexes
- Space capacity definition and allocation
- Environmental implications of space debris including light pollution.

Logistics is the management of the flow of things (resources, people, data...) from a point of origin to a point of consumption.

- Flow and network logistics models
- Constellation deployment
- Consideration of the environmental impact on Earth during the lifecycle phases of satellite
- On-orbit assembly
- Space supply chain
- Transportation modelling and associated operations research
- Selection of launcher and space transport vehicles at system-level including environmental impact assessments and alternatives with lower emissions
- New technologies or orbits with significant logistics demands

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Space Traffic Management and Space Situational Awareness (STM and SSA)

- Earth-based and space-based observations and measurements
- Re-entry prediction
- Space surveillance
- Collision avoidance manoeuvres
- Fragmentation analysis and reconstruction

Space debris mitigation

- Space assets protection against collisions
- End-of-life mitigation and remediation
- Active debris removal missions
- Design for demise:
- Design for demise and space safety
- Environmental impact of re-entry phase
- Inspection, refuelling and servicing missions design for repair/recycle
- Demonstration missions
- Environmental impacts of debris mitigation

Measures and strategies for reducing environmental risks and enhancing space debris mitigation techniques.