

Calendar of Events

September 2018 First Announcement/Call for Papers

15th Jan 2019 Deadline for Abstracts

1st April 2019 Authors Notification

7th June 2019 Deadline for Papers and Authors Registration

21st June 2019 Second Announcement/Final Programme

16.-17. Sep 2019 Spectrum Mechanisms Training

18.-20. Sep 2019 Symposium

Deadline for Abstracts

Abstracts should be submitted online by 15th of January 2019 using the link available on www.esmats.eu. Any related questions should be sent by email to ESMATS@ohb.de.

Proceedings

Authors will be notified of the Organisation Committee's decision by April 2019. Authors whose papers have been accepted will receive author's guidelines for the preparation of a paper for inclusion in the symposium proceedings that will be distributed to all participants at the Symposium. The proceedings will be available digitally, a paper copy may be ordered at registration at extra cost.

Courses / ESMATS full Spectrum Mechanisms Training

Prior to ESMATS, three courses will be offered, which provide engineers a full spectrum of space mechanisms development training. The three courses, each lasting two days, span the fundamentals of all space mechanisms, the always crucial field of tribology and more advanced topics in mechanisms design and testing. The European Space Tribology Laboratory (ESTL) will be holding its Space Tribology Course (STC). In parallel, the Basic Mechanisms Design Course will be provided by Launchspace and the Advanced Mechanisms Design will be held by ESA/ESTEC. Completion of all three courses coupled with regular participation in mechanisms symposia provide the best available knowledge base for space mechanisms engineers.

All three training courses will take place in parallel in the Eurostars Grand Central Hotel, Arnulfstrasse 35, 80636 Munich, on Monday, 16th and Tuesday, 17th September 2019, 9:00 – 18:00.

Further information about the courses and registration procedure is given on www.esmats.eu, potential course delegates are advised to book early to secure a place on the course of their choice.

Exhibition Area

An area will be available for hardware exhibition close to the auditorium. Booking can be made through the conference web page www.esmats.eu

Local Arrangements

We have made an arrangement with a booking agency, who have already reserved a large number of rooms in Munich and the Munich area. There is a direct link to this booking agency on the website (www.esmats.eu) on a first come first serve basis. Early reservations are highly advisable.

Address of the Symposium site

The Location for ESMATS 2019 is

The Gasteig Cultural and Conference Centre

<https://en.gasteig.de>

Organising Committee

Lionel Gaillard (Chairman)
ESA/ESTEC Netherlands

Markus Thiel (Co-Chairman)
Head of Mechanisms and Robotics, OHB System AG Germany

Manfred Falkner (Deputy)
ESA/ESTEC Netherlands

Reiner Barho, Airbus Defence and Space Germany
Ed Boesiger (US Coordinator), Lockheed Martin USA
Jean-Luc Bozet, Université de Liège Belgium
Carlos Compostizo, SENER Spain
Henk Cruijssen, Airbus Defence and Space Netherlands
Christian Dupuy, CNES France
Gilles Feusier, EPFL Switzerland
Xavier Francois, Thales Alenia Space France
Oliver Kunz, RUAG Space Switzerland Switzerland
Simon Lewis, ESTL-ESR Technology UK
Johan Mürer, Kongsberg Defence & Aerospace Norway
Enrico Suetta, Selex Galileo Italy

Local Organising Committee at OHB System:

Markus Thiel
Stefan Bedrich
Tim Tattusch

General information about ESMATS is available at www.esmats.eu

ESMATS 2019

European Space Mechanisms and Tribology Symposium



Munich, Germany, 18th to 20th September 2019

Join ESA & OHB for ESMATS 2019
in the Capital of Bavaria!



Venue

From 18th to 20th September 2019, the European Space Agency (ESA) and OHB System AG as well as various sponsors and supporters, will hold the 18th European Space Mechanisms and Tribology Symposium at the Gasteig Cultural and Conference Centre, Munich. (<https://en.gasteig.de>)

Aims and Scope

The aims of the Symposium are to

- Foster a dialogue between space mechanisms engineers on the design, development, testing, production and in-flight experience of spacecraft and payload mechanisms
- Encourage personal contacts in the mechanisms and tribology community
- Provide a networking opportunity as well as a presentation platform for companies and organizations
- Encourage the transfer of technology to and from space applications
- Promote awareness that space opportunities afford sustainable industrial growth.

Preliminary Programme

The areas listed below will be in the main focus of the Symposium. Papers presenting hardware and covering these areas, coming from European and non-European entities, are specifically encouraged. However, papers covering other Space Mechanism related topics will be assessed on merit. All abstracts submitted will be given due consideration.

Mechanisms Design, Analysis, Manufacturing, Assembly, Integration and Testing

- Lessons learned from qualification
- Descriptions of novel and challenging designs
- New methods for design, analysis, simulations and testing of mechanisms
- Design guidelines, high reliability
- Design/manufacturing/verification for high-volume production.

Components/Equipment, Micro/Nano Devices

- Motors, actuators, transmission devices, bearings
- Hold-down/release, deployment, pointing, scanning, high-precision and high-performance devices
- Wheels, mechanical coolers, pumps, valves, solar array drive mechanisms, etc.
- Sensors, miniaturisation of space mechanisms, MEMS, micro/nano developments.

Tribology and Materials

- Lubricants and lubrication for bearings, gears, joints, electrical contacts
- Application of smart materials in mechanisms
- Extreme temperatures, environments, and operating conditions, long term storage
- New tribo-materials and /or surface modification
- Tribology for micro/nano devices.

Launch Vehicles

Separation systems, engine/propulsion regulation, gimbaling devices, turbopumps.

In-Orbit Performance and Post-Flight Investigations

- Experience with flown hardware, including reports on in-flight mechanism performance and anomalies, lessons learned
- Post-flight investigation of mechanisms and tribological components.

Science Observatories, Earth Remote Sensing, and Planetary Exploration Mechanisms

- Mechanisms for manipulations, robots, rovers
- Sampling systems and in-situ analysis devices
- Mechanical devices for science and remote sensing instruments.

Space Platforms, Tethers, Re-entry Vehicle Mechanisms

- Mechanisms for re-entry vehicles and the International Space Station
- Long-term mechanism operation and maintenance in space
- Oral or poster presentations may be accompanied by the demonstration of novel mechanisms and products.

Registration and Fees

The Symposium programme containing details of the registration procedure will be issued in April 2019. Information on the submission of abstracts and papers is given under "Call for Papers" below and on the website.

The registration fee (covering participation in the Symposium, coffee breaks, lunches, social events and a CD-ROM with proceedings) will be published soon on the web page.

Students Contest

Students of local universities will be invited to participate in a Student's contest for the 18th ESMATS with the development of innovative solutions to typical space problems chosen by ESA & OHB System AG. Selected students will attend the symposium and present their works in the exhibition hall.

Tourist Information

There will be local tourist information available during the symposium.

Cocktail Reception

The cocktail reception will take place on Wednesday, 18th of September 2019 on the second floor foyer and the terrace of the Gasteig, next to the Carl Orff hall.

Bavarian Dinner

A Bavarian style dinner will take place on Thursday, 19th of September 2019 at the Augustiner Keller, Arnulfstrasse 52, 80335 Munich.

Cancellation Policy

A registration can be cancelled at a minimum administration fee of 10% per participant until 1st of September 2019. Cancellations after this date are not eligible for refund. Substitution of participants is permitted.

Working Language and Presentation Time

The working language of the symposium will be English. For each paper presented orally, 15 minutes are allocated followed by 5 minutes for discussion. Posters will be displayed during the whole symposium in the exhibition area.

Presentation Policy

Recording devices are not permitted during the sessions.

Call for Papers

Authors are invited to submit proposals for presentations to the Symposium in the form of an extended abstract using the online submission tool (up to 500 words including drawings or photos, no mail or email submissions).

The abstract submission shall include

- title of the paper
- author(s) name(s), affiliation(s) and address
- telephone, and e-mail address
- a clear and precise outline of the novelty of the paper and major points of interest
- an indication as to whether a paper on the subject has previously been published
- an indication of presentation preference (oral or poster)
- confirmation that the intended content can be presented and published in Europe.

Abstracts selection will be based on the following criteria

- relevance to space mechanisms and tribology
- topic based on lessons learnt
- topic based on hardware test results
- originality/novelty of the innovation presented
- quality and clarity of abstract.