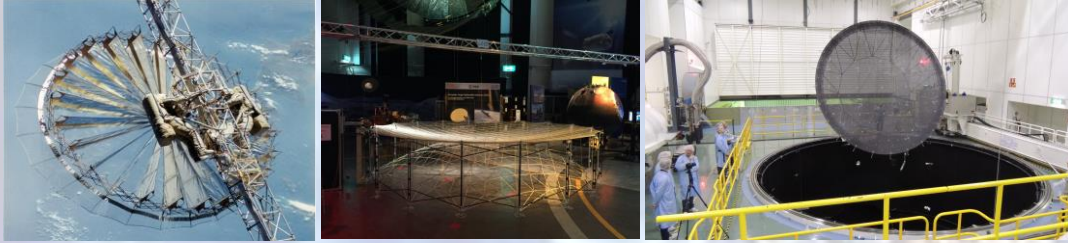


CALL FOR ABSTRACTS  
INTERNATIONAL CONFERENCE ON

ADVANCED LIGHTWEIGHT STRUCTURES AND REFLECTOR ANTENNAS



Photos courtesy of GTU, LSS, TUM, ESA

19-21 September 2018  
Hotel Courtyard Marriott, Tbilisi, Georgia

**SUPPORTING ORGANIZATIONS**

- European Space Agency, ESTEC / ESA, The Netherlands
- European Association on Antennas and Propagation
- Georgian Technical University, Georgia
- Large Space Structures GmbH (LSS), Germany
- Caucasus Space Ltd., Georgia
- Electromagnetic consulting and software, Georgia
- Georgian National Academy of Science, Georgia
- Ministry of Science and Education, Georgia
- LEPL G. Tsulukidze Mining Institute, Georgia
- Batumi Shota Rustaveli State University
- Rustavi 2, Broadcasting Company, Georgia
- Georgian Public Broadcasting (GPB), Georgia
- Adjara TV, Georgia



**INTRODUCTION**

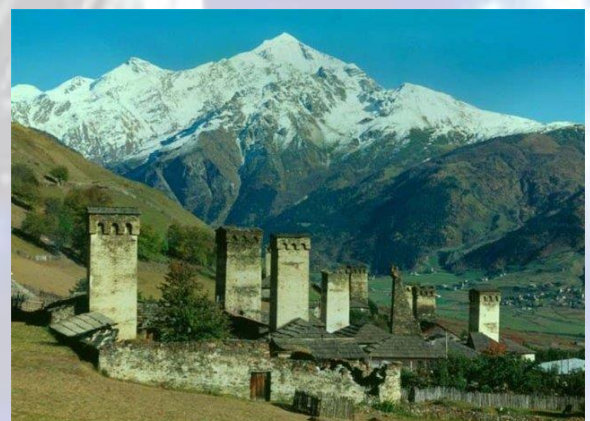
You are invited to participate and contribute to the 3rd international Conference on “Advanced Lightweight Structures and Reflector Antennas” being prepared by the Organizing Committee with the participations of experts from the European Space Agency (ESA).

It follows the successful conferences organized in 2009 and 2014 in Tbilisi, Georgia. The conference will be held:

- September 19-21, 2018
- Hotel Courtyard Marriott, 4 Freedom Square, Tbilisi 0105, Georgia



Georgia



## OBJECTIVES OF THE CONFERENCE

The objectives of the conference are:

- To present the state of the art and explore innovative approaches for advanced lightweight structures and reflector antennas;
- To share expertise between space and ground actors for lightweight structures;
- To perform deployment demonstration for recently developed structures and antennas (feel free to offer a demonstration / exhibition)

The conference will particularly facilitate exchange of opinions and challenges in concepts and developments of Large Deployable Structures and Antenna Reflectors technologies focusing on current initiatives and identifying the further steps to be initiated.

Emphasis of the current conference is expected to be on Large Deployable Structures and Antennas including Deployable Antennas for small Satellites (e.g. CubeSats) which are large w.r.t the platform size. In addition, high frequency (up to 100 GHz), Shaped and Reconfigurable Deployable Antennas will be emphasized to address new challenges in terms of theory, design, analysis and technology as well as respective markets.

To achieve this, leading industries and academia experts in the mechanical and radio-electrical domains from all over the world have accepted to join the Technical Committee and elaborate together the conference program.

## TOPICS OF INTEREST

Advanced lightweight large structures and antenna systems for space and ground use, innovative technologies, designs and developments, novel materials as well as mechanical/RF analysis / testing / verification procedures are suggested addressing but not limited to the following classes of topics:

- |   |  |
|---|--|
| <ol style="list-style-type: none"><li>1. Large Antennas and reflectors:<ul style="list-style-type: none"><li>• High frequency deployable antennas</li><li>• Deployable antennas for small satellites and CubeSat</li><li>• Large size deployable reflectors;</li><li>• Reconfigurable reflectors;</li><li>• Reflect arrays, transmitarrays and lenses;</li><li>• Direct radiating arrays;</li><li>• Deployable helixes and tubular antennas;</li></ul></li><li>2. Deployable Structures and Mechanisms:<ul style="list-style-type: none"><li>• Deployable appendages;</li><li>• Deployable arms with mechanisms;</li><li>• Hold down and release mechanisms;</li><li>• Membrane structures;</li><li>• Solar sails, drag sails and solar arrays;</li><li>• Inflatable structures and sunshields.</li></ul></li><li>3. Applications Related Aspects of Space Deployables:</li></ol> | <ul style="list-style-type: none"><li>• Earth observation (Radiometers, RADAR, SAR);</li><li>• Telecommunication;</li><li>• Science.</li></ul> <ol style="list-style-type: none"><li>4. Intelligent materials and adaptive structures:<ul style="list-style-type: none"><li>• New structural and multifunctional materials;</li><li>• Shape morphing structures;</li><li>• Radio transparent, reflective and absorptive materials;</li><li>• Flexible materials and structures;</li><li>• Smart structures and materials;</li><li>• Manufacturing techniques &amp; related (ALM, etc.)</li></ul></li><li>5. Simulation and Testing of Large Structures and Antennas:<ul style="list-style-type: none"><li>• Large structures and system interaction aspects;</li><li>• Interaction of mechanical and RF behavior;</li><li>• RF/mechanical and thermal co-design and optimization</li><li>• In-orbit control-structure interaction;</li><li>• Mechanical / thermal / TV &amp; thermoelastic testing;</li><li>• Radio-Frequency (RF) / PIM antenna testing;</li><li>• Mechanical / thermal / RF modeling and simulation;</li></ul></li></ol> |
|---|--|

Experts are welcome to organize Invited Sessions in their specific areas related to the conference. Please ask for more specific info at [conf.icssem@gtu.ge](mailto:conf.icssem@gtu.ge)

## ABSTRACT SUBMISSION

Please submit your abstracts of papers for inclusion in the conference program. The abstract should clearly identify the subject of the paper, motivation, innovative aspects, chosen approach and methods, achieved results, achieved benefits and possible open points.

Papers will be selected on a basis of 300-500 words abstracts containing the following information

- Title of paper
- Authors full name and affiliations
- Name of prime author and/or contact person
- Address, e-mail, telephone and fax numbers
- Summary of the paper
- Proposed topic of the paper

Abstracts should be sent by May 14, 2018 to the conference secretariat to [conf.icssem@gtu.ge](mailto:conf.icssem@gtu.ge). Authors will be notified of the decision of the technical committee by June 11, 2018. Authors with accepted papers will then receive instructions for the preparation of their full-length paper. The deadline for final paper submission is July 31, 2018.

Proceedings will be published in an ISBN registered book which will be distributed during the conference.

## CALENDAR OF EVENTS

- May 14, 2018** – Deadline for Abstracts' Submission
- June 11, 2018** – Authors Notification
- June 29, 2018** – Issue of Preliminary Program
- July 31, 2018** – Submission of Final Papers
- September 3, 2018** – Issue of Final Program
- September 19-21, 2018** – Conference Presentations

## REGISTRATION FEE

The registration fee for the conference is 425 Euro (VAT not included, 19%) and covers:

- Access to all sessions
- 1 CD ROM of the proceedings
- Coffee breaks
- Lunches
- Welcome Dinner
- Tour to Kakheti wine region of Georgia
- Conference Banquet
- Bus service

## REGISTRATION AND HOTEL RESERVATION

A conference registration form will be available after the deadline of the abstract submission.

Hotels can be reserved via the local organizing committee.

## FOR MORE INFORMATION

Please visit: <https://atpi.eventsair.com/QuickEventWebsitePortal/icalsra/advanced-lightweight-structures-and-reflector-antennas> and contact the Conference Secretariat at [conf.icssem@gtu.ge](mailto:conf.icssem@gtu.ge).

## CONFERENCE ORGANIZING COMMITTEE

Leri Datashvili (Large Space Structures GmbH, Germany)

Nodar Tsignadze (Georgian Technical University, Georgia)

Horst Baier (Large Space Structures GmbH, Germany)

Elguja Medzmariashvili (Georgian Technical University, Georgia)

## TECHNICAL COMMITTEE

Piero Angeletti (ESA-ESTEC, The Netherlands);

Jean-Christophe Angevain (ESA-ESTEC, The Netherlands);

Horst Baier (Large Space Structures GmbH, Germany);

Kai-Uwe Bletzinger (Technische Universität München, Germany);

Rafael Bureo (ESA-ESTEC, The Netherlands);

Leri Datashvili (Large Space Structures GmbH, Germany);

Jose Encinar (Universidad Politecnica de Madrid, Spain);

Torben Henriksen, (ESA-ESTEC, The Netherlands);

Christian Hühne, (German Aerospace Center (DLR), Germany);

Kees van t Klooster (retired from ESA-ESTEC, The Netherlands);

Alexander Ihle (ESA-ESTEC, The Netherlands);

Philippe Lepeltier (Thales Alenia Space, France);

Maurizio Lori (HPS GmbH, Germany)

Cyril Mangenot (Api-Space, France);

Elgudja Medzmariashvili, (GTU, Georgia);

Peter de Maagt (ESA-ESTEC, The Netherlands);

Alberto Meschini (Thales Alenia Space – Italia);

Norbert Nathrath (NTP, Germany);

Satoru Ozawa (Japan Aerospace Exploration Agency, Japan);

Sergio Pellegrino (California Institute of Technology, USA);

Ernst Pfeiffer (HPS GmbH, Germany)

Julian Santiago-Prowald (ESA-ESTEC, The Netherlands);

Gonçalo Rodrigues (ESA-ESTEC, The Netherlands);

Manfred Schmid (Astrium GmbH Satellites, Germany);

Lucio Scolamiero (ESA-ESTEC, The Netherlands);

Lorenzo Scialino, (Space Engineering S.p.A., Italy);

Constantinos Stavriniadis (IABG mbH);

Marco Straubel, (DLR, Germany);

Huifeng Tan (Harbin Institute of Technology, China);

Mark Thomson (Jet Propulsion Laboratory, USA);

Shota Tserodze (Georgian Technical University, Georgia);

Nodar Tsignadze (Georgian Technical University, Georgia).

## LOCAL ORGANIZATION AND CONFERENCE SECRETARIAT

*Institute of Constructions, Special Systems and Engineering Maintenance Georgian Technical University*

68/B Kostava str., 0171, Tbilisi, Georgia

Tel.: + 995 32 233 09 36;

+ 995 32 236 52 39

Fax: + 995 32 236 52 37

E -mail: [conf.icssem@gtu.ge](mailto:conf.icssem@gtu.ge)

