



# REPORT ON THE IASS TECHNICAL ACTIVITIES, 2015 – 2016

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## 1. INTRODUCTION

The annual report of the Technical Activities Committee (TAC) summarizes the main activities, results and news related to the IASS Working Groups (WGs).

If you are a member of the Association, you will be familiar with the IASS policy on Technical Activities, which includes the organization of Working Group sessions during IASS annual Symposia and the reporting of WG activities in the website of the Association.

Besides the organization of sessions in the annual Symposia, Working Groups carry out diverse technical activities ranging from the organization of scientific meetings to the preparation of guidelines, reports or scientific papers, as well as the edition of special issues of the Journal of the IASS. You may find more detailed information about WG membership, organization and activities in the IASS website, and in previous TAC reports available under the Technical Activities menu tag.

All IASS members have full access to the Working Group webpages. An abridged presentation of Working Group activities for non-members is available on the public part of the website. WG webpages include information about mission, objectives, activities and membership of each group, as well as links to relevant related documentation.

## 2. ACTIVITIES DURING 2015-2016

### 2.1. News related to the Working Groups

The IASS Executive Council (EC), during the September 2016 meeting in Amsterdam,

approved the following decisions related to Working Groups:

- **WG 4 – Technical Expert Group on Masts and Towers.** Ulrik Stottrup-Andersen has stepped down as WG 4 chair. The IASS President has appointed Mr. Mogens Nielsen, former Secretary of the group, as new chair. The new secretary will be Thomas Laursen.
- **WG 5 – Concrete Shell Roofs.** Following the request from the group co-chairs to change the name of the group to “Shell Roofs”, the EC decided that the acceptance of the new name is linked to the reformulation of its mission and objectives.
- **WG 15 – Structural Morphology.** Dr. Jeroen Coenders has stepped down as WG 13 chair. Current co-chairs are Profs. Niels de Temmerman and Bernard Maurin. The group is currently undergoing a process to redefine its structure and mission.

The IASS President and the EC members expressed their gratitude to Ulrik Stottrup-Andersen and to Jeroen Coenders for their commitment and achievements as past chairs of their groups.

### 2.2. WG Recommendations and Guidelines

It is planned to make all past WG recommendations, reports and guidelines accessible as pdf files in a single place on the IASS website.

In the meanwhile, recent reports can be downloaded through the individual Working Group pages in the members-only part of the website (accessible for IASS members).



The "**Structural Design Guidelines for Temporary Spatial Structures**", prepared by WG 19, can be already downloaded, and the "**Guide to Buckling Load Evaluation of Metal Reticulated Roof Structures**", prepared by WG8, will be available soon.

### 2.3. Revised IASS Symposium Guidelines

A new revised version of the IASS Symposium Guidelines has been approved by the EC, and is already available for future symposium organizers. The main changes and additions with respect to the former version of 2012 refer to the

clarification of the different committees and responsibilities of the organizers, the use of the IASS logo, as well as the specification of required information for the online publication of the proceedings and the related review, ethics and copyright policy.

### 2.4. Summary of Working Group activities

A summary of the main activities of each of the active Working Groups is included in the following pages. Further details may be found on the corresponding WG website.

<p><b>WG 3 Cooling and Solar Updraft Towers</b> <b>Prof. Dr. Eng. Reinhard HARTE (Chair)</b></p> <ul style="list-style-type: none"><li>• Participated in the 17th <i>IAHR International Conference on Cooling Towers and Heat Exchangers</i> in Gold Coast, Australia, 7-11 September 2015 (<a href="http://www.geothermal.uq.edu.au/17iahr-cooling-tower">http://www.geothermal.uq.edu.au/17iahr-cooling-tower</a>)</li><li>• Participated in the 85th <i>CICIND International Committee for Industrial Chimneys Conference</i> in Mainz, Germany, 4-7 May 2016, (<a href="http://www.cicind.org/conferences.html">http://www.cicind.org/conferences.html</a>)</li><li>• Has edited a special issue of the J. IASS on <i>Cooling Towers</i> (vol. 57 n.1, 2016)</li><li>• Plans to organize a session at IASS 2017 Hamburg.</li><li>• Current membership: <b>20</b> IASS Members</li></ul>
<p><b>WG 4 Technical Expert Group on Masts and Towers</b> <b>Eng. Ulrik Stottrup-Andersen (past Chair), Eng. Mogens G. NIELSEN (Chair), Eng. Thomas LAURSEN (Secretary)</b></p> <ul style="list-style-type: none"><li>• Has held the 27th meeting of the WG in Prague, in September 2015.</li><li>• Plans to hold the next group meeting in Beijing in September 2017.</li><li>• Current membership: <b>40</b> IASS Members</li></ul>
<p><b>WG 5 Concrete Shell Roofs</b> <b>Prof. Dr. Sigrid ADRIAENSSENS, Prof. Dr. Philippe BLOCK (Chairs)</b></p> <ul style="list-style-type: none"><li>• Plans to edit a special issue of the J. IASS on the <i>State-of-the-Art on Shell Structures</i> to be published in 2017.</li><li>• Plans to organize a session on <i>Shells and extreme loading</i> at IASS 2017 Hamburg.</li><li>• Current membership: <b>31</b> IASS Members</li></ul>
<p><b>WG 6 Tension and Membrane Structures</b> <b>Prof. Dr. Ken'ichi KAWAGUCHI, Prof. Marijke MOLLAERT, Prof. Ronald SCHAEFFER (Chairs)</b></p> <ul style="list-style-type: none"><li>• Organized a two-part session at the IASS 2016 Symposium in Tokyo.</li><li>• Organized the <i>TENSINET - COST ACTION TU1303 SYMPOSIUM 2016</i> at the University of Newcastle, UK, 26-29 October 2016 (<a href="http://www.novelstructuralskins.eu/">http://www.novelstructuralskins.eu/</a>)</li><li>• Current membership: <b>27</b> IASS Members</li></ul>

### **WG 8 Metal Spatial Structures**

**Prof. Dr. Shiro KATO, Prof. Toru TAKEUCHI, Prof. Dr. Su-Duo XUE (Chairs)**

- Organized a two-part session at the IASS 2016 Symposium in Tokyo.
- The *Guide to Buckling Load Evaluation of Metal Roof Spatial Structures* will be made available to IASS members in the next future.
- The working committee of the WG in charge of the preparation of a *Guide to Earthquake Response Evaluation of Metal Roof Spatial Structures* has started the discussion and preparation of the guide.
- Plans to organize a session at IASS 2017 Hamburg on *Analysis and design of reticulated shells against severe external disturbances*.
- Current membership: **20** IASS members.

### **WG 12 Timber Spatial Structures**

**Dr. Andreas FALK, Prof. Dr. Minjuan HE (Chairs)**

- Organized a two-part joint session with WG 18 on *Timber structures and environment* at the IASS 2016 Symposium in Tokyo.
- Plans to organize a session at IASS 2017 Hamburg on *Cross-disciplinary design and production of bio-based structures*, as well as a joint session with WG 18 on *Environmentally Compatible Structures*.
- Plans to edit a special issue of the J. IASS on *Bio-based and bio-inspired Environmentally Compatible Structures*.
- Current membership: **22** IASS members.

### **WG 13 Computational Methods**

**Prof. Makoto OHSAKI, Prof. Dr.-Ing. Kai-Uwe BLETZINGER, Prof. Dr. Carlos LÁZARO (Chairs)**

- Organized three sessions at the Membranes 2015 Conference held in Barcelona in October 2015 (<http://congress.cimne.com/membranes2015/>)
- Organized two sessions at IASS 2016 Tokyo: a two part session on *Bio-inspired control of structures* and a two-part session on *Bending-active and flexible structures* (jointly with WG 15)
- Is organizing the *Structural Membranes 2017* Conference in Munich, 9-11 October 2017 (<http://congress.cimne.com/membranes2017/>)
- Plans to organize several sessions at IASS 2017 Hamburg.
- Current membership: **26** IASS Members.

### **WG 15 Structural Morphology**

**Dr. Jeroen COENDERS (past Chair), Prof. Dr. Niels DE TEMMERMAN, Prof. Dr. Bernard MAURIN (Chairs)**

- Organized four sessions at the IASS Symposium 2016 in Tokyo on *Morphology, Origami, Graphic statics and Bending-active and flexible structures* (the last one jointly with WG 13).
- Plans to review the current study group plan, and the mission and objectives of the group.
- Plans to organize several sessions at IASS 2017 Hamburg.
- Current membership: **65** IASS Members.

### **WG 17 Historical Spatial Structures**

**Prof. Dr. Görün ARUN (Chair)**

- Organized a session at the IASS 2016 Symposium in Tokyo.
- The group is currently redefining its mission and objectives.
- Is organizing the *4<sup>th</sup> International Conference on Structural Health Assessment of Timber Structures (SHATIS'17)* in Istanbul, 13-17 September 2017 (<http://shatis17.hku.edu.tr/index>)
- Plans to organize two sessions on *Identification and documentation of historic spatial structures and Assessment and preservation of historic spatial structures* at IASS 2017 Hamburg.
- Current membership: **23** IASS Members.



#### **WG 18 Environmentally Compatible Structures**

##### **Dr. Petr VEGH (Chair)**

- Organized a two-part joint session with WG 12 on *Timber structures and environment* at the IASS 2016 Symposium in Tokyo.
- Plans to organize a joint session with WG 12 on *Environmentally Compatible Structures*.
- Aims to strengthen the relationship between the topics of the group and the specificity of the IASS.
- Current membership: **6** IASS Members.

#### **WG 20 Teaching of Shell and Spatial Structures**

##### **Prof. Dr. Olga POPOVIC LARSEN, Dr. Alireza BEHNEJAD (Chairs)**

- Organized a panel discussion in collaboration with the Iranian Academic Center for Education in Kerman, Iran, in October 2015.
- Organized a session on *Teaching Shell & Spatial Structures* at the IASS Symposium 2016 in Tokyo.
- Plans to organize two sessions at IASS 2017 in Hamburg, on *Learning by Making* (jointly with WG 15) and on *Educational methods for dealing with complex environments*.
- Current membership: **29** IASS Members.

### **3. FINAL REMARKS**

IASS Working Groups are the center of the technical and scientific activities of the association. They evolve and adapt to new fields of interest and action of IASS members.

As in the past years, I would like to acknowledge the efforts of all Working Group chairs in coordinating the WG activities, recruiting members, preparing reports and technical documentation, and contributing the Organized Sessions at the various recent Symposia. I also stress the gratitude of the association to the Chairs who are leaving their office.

**I encourage all IASS members to participate in the groups, and all Working Groups to progress in their activities.**