



## **Commission GASS 2021 Report**

### **Commission K**

#### **1. Results of Election of Vice-Chair**

There were two candidates for the position of Commission K Vice Chair: Prof. Francesca Apollonio (Sapienza University of Rome, Italy) and Dr. Lars Ole Fichte (Helmut Schmidt University, Germany). An online voting tool was used for elections this time. Total 14 Official Members participated in the voting. After the voting tool was closed, the URSI Secretariat announced the results that Prof. Francesca Apollonio received 28 votes and Dr. Lars Ole Fichte received 14 votes. The Council confirmed on August 31 that Prof. Apollonio was elected Vice Chair.

#### **2. Results of Election of Early Career Representative**

There was one candidate for the position of Commission K ECR: Dr. Emily Porter (University of Texas at Austin, USA). An online voting tool was used for elections this time. Total 14 Official Members participated in the voting. After the voting tool was closed, the URSI Secretariat announced the results that Dr. Emily Porter received 28 votes. The Council confirmed on August 31 that Dr. Porter was elected ECR.

Dr. Kensuke Sasaki (NICT, Japan), the incumbent ECR, agreed to continue serving ECR for his second term.

#### **3. Appointment of Associate Editor for *Radio Science Bulletin***

Dr. Emily Porter, newly elected ECR, was appointed as Associate Editor for *Radio Science Bulletin*.

#### **4. Updates/Status of Working Groups**

Commission K has no working groups at the moment. We may create working groups if necessary.

#### **5. Updates to Terms of Reference of Commission**

The current Commission K terms of reference are as follows:

*The Commission is charged with promoting research and development in the following domains:*

- *Physical interaction of electromagnetic fields (from static to optical) with biological systems;*
- *Biological effects of electromagnetic fields;*
- *Mechanisms underlying the effects of electromagnetic fields;*
- *Exposure systems of experimental electromagnetic fields;*
- *Assessment of human exposure to electromagnetic fields;*
- *Medical applications of electromagnetic fields.*

Commission K has no changes to the current terms of reference at this moment. However, they have not been updated since 2008.



At our Commission Coordinating Activities meetings during GASS 2021, we had intensive discussion on this issue, but finally it is concluded that we will carry over the discussion to further meetings, particularly Technical Advisory Committee meetings.

## **6. Meetings proposed to be supported in the coming triennium**

Besides URSI flagship conferences, namely, AT-AP-RASC 2022 and GASS 2023, we may propose to support meetings relevant to Commission K, if we deem necessary or appropriate.

## **7. Report and comments on the scientific program of the Commission for the current GASS**

Commission K organized 15 scientific oral sessions (70 papers in total) and 2 FIP (Flash Interactive Poster) sessions (22 papers in total). Commission K served the lead Commission in 5 oral sessions (21 papers in total) that were jointly organized with Commission B (KB1 and KB2), Commissions B and E (KBE), Commission D (KD), and Commission E (KE). In addition, Commission K participated in 4 other joint sessions led by Commissions B, C, D, and F.

Moreover, Commission K organized a Workshop “Pulsed electric fields: from molecular interactions to medical treatments” as a Pre-Conference activity during the whole day of Saturday, August 28, which had a good level of attendance. Total 10 papers were presented.

The Commission K Tutorial “ICNIRP guidelines on RF EMF human exposure limitations” was presented by Prof. Rodney Croft of University of Wollongong, Australia.

The organized sessions have covered conventional topics of Commission K; e.g., biological effects of electromagnetic fields, assessment of human exposure for non-ionized radiation protection, and medical applications of electromagnetic fields. In addition, Commission K newly convened sessions of animal and cell experiments by exposure to electromagnetic fields and of healthcare and rehabilitative application.

Overall, the sessions organized by Commission K were considered to be successful with high-quality presentations as well as session chairs with expertise in the area of research on each session topic.

Despite the hybrid organization of the whole conference allowing both on-site and on-line participants, the physical presence was considered satisfactory reaching for some sessions the number of around 20 attendees in presence.

All the oral and FIP sessions have been recorded and are available from the Virtual Platform (<https://ursigass2021.livebit.it/index.php>) in the section “On Demand”.



## 8. Proposed sessions for the next GASS

Regarding scientific sessions to be organized for the next GASS 2023, we will have to take into account the importance of joint sessions with other Commissions. So far, no specific sessions have been proposed for the next GASS since our discussion was mainly on the proposed sessions for AT-AP-RASC 2022.

Furthermore, we need to bear in mind that we are discussing updates to the terms of reference and the next GASS 2023 will be held in Japan.

## 9. Proposed sessions for the AT-AP-RASC 2022

For organizing scientific sessions, Commission K has enhanced cooperation with other organizations/communities and has also emphasized joint sessions with other Commissions. These points must be advantages of URSI.

Having said that, we need to bear in mind that two major international conferences, whose topics are partly similar to the scope of Commission K, are scheduled in Asia just one week before and two weeks after the AT-AP-RASC 2022.

- 2022 IEEE MTT-S IMBioC, 19–21 May 2022, China
- BioEM2022, 19–24 June 2022, Japan

In our meetings held during URSI GASS 2021, ten provisional topics of scientific sessions and candidates of conveners for AT-AP-RASC 2022 were proposed in addition to an open session. Potential conveners are supposed to provide brief session descriptions for contributors' convenience.

## 10. Other business

### **(1) Information about upcoming major international conferences/events relevant to Commission K**

Prof. Jianqing Wang (Nagoya Institute of Technology, Japan) briefly introduced BioEM 2022 to be held in Nagoya, Japan, in June 2022 as one of Co-Chairs. He also requested participants to submit their papers to the conference.

### **(2) Discussion on the relationship between international conferences and URSI flagship conferences**

After the introduction of BioEM 2022, a participant pointed out that kind of coordination should be made between URSI flagship conferences and such major international conferences relevant to Commission K. Some discussion was made on how to coordinate or harmonize these conferences.

Finally, it is concluded that we will carry over the discussion to Technical Advisory Committee meetings.



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