

Commission E (Electromagnetic Noise and Interference) Activity Report

Sep 2020 - July 2021

Commission E in Japan is holding technical meetings and sub-committee activities in collaboration with the Technical Committee on Electromagnetic Compatibility (EMCJ) of the Institute of Electronics, Information and Communication Engineers (IEICE), the Technical Committee on Electromagnetic Compatibility of the Institute of Electrical Engineers of Japan (IEEJ-EMC), IEEE EMC Society Japan Joint Chapter and Sendai Chapter, Society of Atmospheric Electricity Japan and some related technical groups.

New committee members

Fifteen new committee members for Commission E of Japan National Committee (25th) were approved during the committee meeting held on 11 June on line due to the covid 19 virus spreading. New chair, vice chair and secretaries were selected as follows:

Chair: Tomoo Ushio (Osaka University)

Vice Chair: Ken Kawamata (Tohoku Gakuin University)

Secretaries: Takeshi Morimoto (Kindai University) and Kaoru Gotoh (NICT)

Domestic academic activities of EMCJ and IEEJ-EMC:

1. Regular EMCJ Meetings

The EMCJ of IEICE had 10 regular technical meetings in the period of September 2020 to July 2021. These regular meetings were technically co-sponsored by IEEE EMC Society Japan Joint Chapter and IEEE EMC Society Sendai Chapter. Three of them were co-organized with Technical Committee on Electromagnetic Compatibility of the Institute of Electrical Engineers of Japan (IEEJ-EMC). In total 105 regular technical reports including 2 invited talks were presented.

(<http://www.ieice.org/ken/program/index.php?instsoc=IEICE-B&tgid=IEICE-EMCJ>)

The featuring technical topic of the October meeting was “EM Simulation, EMC and Microwaves” and co-organized with the Technical Committee on Microwaves (MW of IEICE), Electronics Simulation Technology (EST of IEICE), and the Technical committee on Photonics-applied Electromagnetic Measurement (PEM of IEICE). The March meeting was co-organized by the Technical Committee on Healthcare and Medical Information Communication Technology (MICT) of IEICE. The meeting in July 2021 was held as the annual “EMCJ Young Researchers' Presentation Meeting” which is co-sponsored by the Japan Institute of Electronics Packaging (JIEP) Electromagnetic Technology Committee.

2. Regular IEEJ-EMC Meetings

The IEEJ-EMC had 3 technical meetings in the period of September 2020 to July 2021. These are technically co-sponsored with the IEICE-EMCJ and IEEE EMC Society Japan Joint

and Sendai Chapters. All of these meetings were held online due to the influence of COVID-19. There were total of 7 technical reports from the IEEJ-EMC at these three meetings.

3. Activity of sub-committees of IEEJ-EMC

As of September 2020, the following 3 sub-committees are continuing activities under the technical committee on the IEEJ-EMC. These are (1) Investigation committee on the health risk analysis of electromagnetic field (July 2014 - June 2016 / June 2016 - May 2020 (Phase 2) / May 2020 - April 2023 (Phase 3)), (2) Investigation committee on Systems and EMC in the IoT (April 2018 – March 2021), and (3) Investigation committee on Measurement and evaluation technology for EMC elucidation of ESD phenomena (Oct. 2020 - Sept. 2023).

As of July 2021, the Investigation committee on Systems and EMC in the IoT (April 2018 – March 2021) has completed its activities in March 2021 and is now preparing issue the technical report. And a new investigation committee was established which is (4) Investigation committee on trend survey of advanced electromagnetic field exposure evaluation basic technology (July 2021 – June 2024).

Domestic academic activities in the field of natural electromagnetic noise:

Commission E members in Japan working actively in the field of natural electromagnetic noise are presented their research results in the following meetings and/or symposiums.

1. International conference/workshop

(1) American Geophysical Union (AGU) Fall Meeting 2020

This international conference is held every year in December in USA and the largest one in the field of Earth and space science. In 2020, the meeting was held on line due to COVID 19 spreading from 1 to 17 December. About 25400 scientists from 107 countries including US, Canada, UK, Japan, China, etc. attended and about 12000 posters are presented with 1.1 million views on line. Several URSI-E committee members were presented the papers in the field of atmospheric electricity and seismo-electromagnetics.

2. Domestic conference/workshop

(1) Society of Atmospheric Electricity of Japan (SAEJ) annual meeting 2020

This is an annual meeting held in January. In 2020 fiscal year, the meeting was held totally on line for the first time in the 59 years history of the society on 8 and 9 January and 54 scientific papers were presented. Several URSI-E committee members were presented the papers related to the areas covered by Commission E.