

Commission E (Electromagnetic Noise and Interference) Activity Report

March 2017 - August 2017

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, and some related technical groups.

Domestic academic activities of EMCJ and IEEJ-EMC:

1. Regular Meetings

The EMCJ of IEICE had five regular technical meetings and IEEJ-EMC had one technical meeting in the period of March to August 2017. These regular meetings were also technically co-sponsored by IEEE EMC Society Sendai Chapter and IEEE EMC Society Japan Joint Chapter. In the EMCJ meetings, 45 regular reports including 12 poster presentations, and five invited talks were presented. The total number of presentations is 50. (<http://www.ieice.org/ken/program/index.php?instsoc=IEICE-B&tid=IEICE-EMCJ>)

The May meeting was held at Nanyang Technological University in Singapore as the third EMC Joint Workshop (EMCJ WS 2017, Singapore) co-organized by EMCJ, IEEJ-EMC and IEEJ-MAG (the Technical Committee on Magnetics). For details of it, refer to the article below.

[1] Takehiro Morioka, IEICE Communications Society – GLOBAL NEWSLETTER Vol. 41, No. 3, pp.16-17, Sep 2017.

The featuring technical topic of the June meeting was “Power Electronics”, and co-organized with the Technical Committee on Semiconductor Power Converters (SPC) of IEEJ. The July meeting was co-organized by the Technical Committee on Electro-mechanical Devices (EMD) of IEICE under the featuring topic of Electrostatic Discharge and general EMC.

The EMCJ Technology Committee celebrates its 40th anniversary this year. In commemoration of it, we have planned continuous special lectures, and two of them below were presented as invited talks in the July meeting. This series of lectures will continue and will be given by IEICE Fellows.

[Invited Lectures] “Commemoration of 40th anniversary of EMCJ”

- (1) Prof. Hiroshi Inoue, “Electromagnetic noise research spanning EMCJ and EMD”
- (2) Prof. Yoshio Kami, “In the space between electric circuitry and electromagnetism”

2. Activity of sub-committees of IEEJ-EMC

As of September 2017, the following four sub-committees are continuing activities under the technical committee on EMC in IEEJ.

- (1) Investigation committee on EMC problems of smart grid and city. (Oct. 2014 – Sep. 2017)
- (2) Investigation committee on trend of evaluation method on electromagnetic field exposure (Dec. 2016 – Nov. 2019)
- (3) Investigation committee on technical trend of evaluation methods on electromagnetic field exposure. (July 2014 – June 2016, June 2016 – May 2020)
- (4) Investigation committee on EMC problems of automotive (PHEV / EV) (May 2016 – April 2018).

The purpose of the new sub-committee (2) is to investigate latest trends in numerical calculation and measurement evaluation on human body protection of electromagnetic field, to study the concept of uncertainty of evaluation method in human body guideline and standardization, and to study the applicability of numerical electromagnetic field analysis technology. In order to contribute to the accumulation of knowledge in this field.

The “Investigation committee on disturbance of transient electromagnetic fields to electronic equipment and wireless communications” has completed its activities in March 2017 and is now preparing to issue the report.

IEEJ Technical Committee on EMC: (June 2017 -)

Chairperson: Kenichi Yamazaki (CRIEPI)
 Secretaries: Hidenori Sekiguchi (NMRI),
 Shinobu Ishigami (Tohoku Gakuin University)
 Assistant Secretaries: Takaaki Ibuchi (Osaka University)

EMCJ Technical Committee: (June 2017 -)

Chairperson: Osami Wada (Kyoto University)
 Vice Chairperson: Jianqing Wang (Nagoya Institute Technology)
 Secretary: Takehiro Morioka (AIST),
 Yasuhiro Shiraki (Mitsubishi Electric Corporation)
 Assistant Secretaries: Chie Sasaki (Panasonic),
 Shinobu Nagasawa (Mitsubishi Electric Corporation)
 Shinichiro Yamamoto (Univ. of Hyogo)

International Meetings and Symposiums on EMC:

1. “EMC Joint Workshop 2017 Singapore (EMCJ WS 2017, Singapore)”, May 18–19, 2017, Nanyang Technological University, Singapore.
 (<http://www.ieice.org/cs/emcj/jpn/regular/emcj-ws.html>)
2. “Asia-Pacific International Symposium on EMC (APEMC 2017)”, June 20-23, 2017, Yonsei University, Seoul, Korea; (www.apemc2017.org)
3. “The 11th International Workshop on the Electromagnetic Compatibility of Integrated

- Circuits (EMC Compo 2017)", July 4-8, 2017, Saint-Petersburg, Russia;
(www.emccompo2017.eltech.ru)
4. "2017 IEEE International Symposium on Electromagnetic Compatibility, Signal and Power Integrity (EMC + SIPI 2017)", August 7-11, 2017, Washington DC, USA;
(<http://www.emc2017.emcss.org/>)
 5. "International Symposium and Exhibition on Electromagnetic Compatibility (EMC Europe 2017)", September 4-8, 2017, ESEO Graduate School of Engineering, Angers, France;
(www.emceurope2017.org).

Workshops and Symposiums on Natural Electromagnetic Noise:

One international meeting and a domestic meeting are listed below which our committee members were organized/presented the scientific results. Some detailed information on these meeting is provided below

International:

6. "ISWL (International Symposium on Winter Lightning)", 12-14 April, 2017, Joetsu, Japan.
(<http://www.iswl2017.jp>)
7. "EGU (European Geosciences Union) General Assembly 2017", 23-28 April, 2017, Vienna, Austria. (<http://www.egu2017.eu>)
8. "JpGU (Japan Geoscience Union) Meeting 2017", 20-5, May, 2017, Makuhari Messe, Chiba, Japan. (http://www.jpгу.org/meeting_e2017/)
9. "IWEP4 (International Workshop on Earthquake Preparation Process 4)", 26-27 May, 2017, Chiba, Japan. (<http://www-es.s.chiba-u.ac.jp/geoph/ulf/iwep4/>)^[1] Abstract submission deadline: April 30, 2017. ^[1]_{SEP}
10. "IAPSO-IAMAS-IAGA Joint Assembly", 27 Aug.-1 Sept., 2017, Cape Town, South Africa.
(<http://www.iapso-iamas-iaga2017.com/index.php>)