

19th Business Meeting of IASPEI/IAGA/IAVCEI Inter-Association Working Group on Electromagnetic Studies of Earthquakes and Volcanoes (EMSEV)

August 28, 2016, Lanzhou, China Republic

Business meeting participants

Bureau members:

Jacques ZLOTNICKI (CNRS, UMR6524, OPGC-Clermont-Fd, France) EMSEV Chair
Seiya UYEDA (University of Tokyo, Japan) EMSEV Past-Chair
Malcolm JOHNSTON (USGS, USA) EMSEV Vice-Chair, IASPEI Liaison
Toshiyasu NAGAO (Tokai University, Japan) EMSEV Secretary
Jann-Yenq LIU (National Central University, Chinese Taipei) IAGA Liaison
Ramesh P. SINGH (Chapman University, India and USA)
Qinghua HUANG (Peking University, China)

EMSEV-WG members:

Xuebin DU (Lanzhou Institute of Seismology, CEA, China)
Katsumi HATTORI (Graduate School of Science, Chiba University, Japan)
Vincenzo LAPENNA (CNR-IMAA, Italy)
Dimitar OUZOUNOV (Chapman University, USA)
Nikolaos SARLIS (University of Athens, Greece)
Yoichi SASAI (Tokai University, Japan)
Tramutoli VALERIO (University of Basilicata, Italy)
Panagiotis VAROTSOS (University of Athens, Greece)
Guoze ZHAO (Institute of Geology, CEA, China)

EMSEV correspondence members:

Livio CONTI (Uninettuno University and INFN, Italy)
Nicola GENZANO (University of Basilicata and Chiba University, Italy)
Guangmeng GUO (Nanyang Normal University, China)
Wenbao HU (Yangtze University, China)
Masashi KAMOGAWA (Tokyo Gakugei University, Japan)
Karl KAPPLER (QuakeFinder, USA)
Xuhui SHEN (Institute of Crustal Dynamics, CEA, China)
Minakshi SARMA DEVI (Gauhati University, India)
Ji TANG (Institute of Geology, CEA, China)
Lazaridou VAROTSOU (University of Athens, Greece)
Qing YE (China Earthquake Network Center, CEA, China)
Xiongfei ZENG (China Huizhou Sanbao Biochem Sci-Tech Co, LTD., China)
Zuoxun ZENG (University of Geosciences, Wuhan, China)
Xuemin ZHANG (Institute of Earthquake Science, CEA, China)

The session was opened by Toshiyasu Nagao, Secretary of EMSEV. He led discussions on the following subjects:

[1] Message of appreciation from IUGG:

Message received in May 2016 from IUGG General Secretary Alik Ismail-Zadeh

The message is: *“On behalf of IUGG, I would like to thank the EMSEV Working Group members and you for the volunteer service on this important inter-Association group. Your Group promotes geophysical sciences not only in the IUGG Member countries, but also involves scientists from non-Member countries in a joint work. Particularly, the EMSEV activity in Kyrgyzstan is much appreciated...”*

Alik Ismael-Zadeh

[2] EMSEV Budget

Every year EMSEV asks IUGG support for the organization of meetings, EMSEV activities, and the promotion of international cooperation. Almost every year, IAGA, IASPEI and IAVCEI contribute to an annual budget at a level of \$1,000 each through IUGG. Occasionally, EMSEV gets an additional support from one of the IUGG Association in order to promote some specific international activity.

In 2016, EMSEV received 3,000 \$ (2655.27 €).

This year, EMSEV would like to devote funds to:

(a) Kyrgyzstan Cooperation

Toshi Nagao (TN) mentioned that the Bishkek Research Station is one of the last research stations of the former Soviet Union. Currently a new Memorandum of Agreement (MOA) needs to be signed in 2017.

In 2017, The Russian Academy of Sciences and the Bishkek Research Station should organize a new international meeting on the Geodynamics.

As in 2014, TN and Jacques Zlotnicki (JZ) plan (1) to participate to this meeting, (2) to run a new small EMSEV-Bishkek RS workshop on data analysis and (3) to sign the MOA. Possibly, teams from Japan, France, Greece and China will attend the workshop.

At present, two autonomous self-recording EMSEV stations are operating near Bishkek at sample rates of 100 Hz and 20Hz. The area is quite dry and some modifications need to be made at the stations.

Seven proton magnetometer stations have also been operating for more than ten years along the Kyrgyz ridge by the Research Station. TN and JZ will process these data at Bishkek and will attempt to encourage Bishkek researchers in this field of

research.

Huang Qingua mentioned that it is difficult to communicate with researchers regarding needs for other data currently collected. JZ mentioned the importance of providing processed data to encourage higher levels of interaction and upgrading of the EMSEV-RS network.

(b) Philippines Cooperation.

TN mentioned the Japanese JICA efforts were going well. Seismic, geodetic and other data are being provided but some difficulties getting real time data remain, as well as getting additional environmental data. JZ commented on the importance of including public credit to the local staff of Taal observatory who do their best to keep the networks operating. Note that the third MOU must be renewed. It is awaiting signature at PHIVOLCS.

TN and Yoichi Sasai and some Japanese scientists visited PHIVOLCS just after the EMSEV2016 in Lanzhou. JICA-PHIVOLCS research program was terminated in February 2015. For the continuation of electromagnetic study, TN submitted a new three years proposal addressed to JSPS was adopted on April 2016.

(c) 2016 Meetings:

- (i) EGU Meeting in Vienna (Austria)
- (ii) 2016 combined EMSEV and CSES workshops
- (iii) IASPEI-IAVCEI workshop, Nov 8, 2016, Barcelona, Spain. JZ will participate and will represent EMSEV
- (iv) AGU 2016. Dimitar Ouzounov (DO) has organized a session

(d) 2017 Meetings:

- (i) EGU Meeting in Vienna (Austria)
- (ii) Meeting and Workshop in Kyrgyzstan (May-June 2017)
- (iii) Workshop, Chiba Japan. Katsumi Hattori is the main organizer.
- (iv) IASPEI, 2017, Kobe, Japan. EMSEV will participate in a session chaired by DO.
- (v) IAVCEI, Portland, USA Aug 14, 2017. A proposal has been submitted by EMSEV entitled "*Multi-parameters techniques for imaging and monitoring active volcanoes. Electromagnetic and other geophysical methods.*"
- (vi) AGU 2017. Dimitar Ouzounov (DO) and other EMSEV members will organize a session.

[3] International EMSEV-CSES 2016 workshop.

The International EMSEV workshop was composed of two parts. A pre-workshop already held in Beijing from August 23 to 25 was managed by the Institute of Crustal Dynamics under the leadership of Professor Shen Xuhui, Academic leader of Satellite application in Earthquake Science and Deputy director of ICD (Institute of Crustal Dynamics, China). This workshop was also under the supervision of the China Earthquake Administration, the CEA, and the China National Space Administration, the CNSA., with the participation of the Italian Space Agency. The target of this workshop segment was to focus on the China Seismo-Electromagnetic Satellite Mission. About 120 persons attended the meeting which was successful.

The core of the EMSEV meeting was held in Lanzhou with the key scientific objective of EMSEV meeting to emphasize understanding of earthquakes and volcanoes from lithosphere to space with key topics (e.g. *Earthquake activities and precursors in Qinghai-Tibet Plateau, electromagnetic signals associated with large earthquakes and volcanic eruptions, study of earthquakes and volcanoes by electromagnetic methods and multi-disciplinary approaches, recognition of precursors (forerunners signals) to earthquakes and volcanic eruptions from lithosphere to space, mechanism, laboratory, and modeling studies, precursors of earthquakes, volcanic eruptions, and other natural hazards: reliability, EMSEV related international projects*).

About 140 persons participated to the meeting, where more than 88 oral presentations were achieved. 25 foreign scientists were present (from France, USA, India, Japan, Italy, UK, Canada, South Korea, Tajikistan, Greece, Mexico, Taiwan) and the meeting benefited the venue of a large number of young Chinese researchers and students.

The two best presentations done by students were awarded by Chairpersons of the sessions and by EMSEV bureau to Ms Kaiyan Hu and Mr Tao Ye.

A discussion on the possibility of a special issue for conference papers relating to the best results presented during the meeting.

Possible editors could be:

- Earth Science which is an English international version of Acta Seismologica Sinica (In Chinese).
- Acta Seismologica Sinica (In Chinese). Edition in this journal is probably required for higher visibility in China.
- Surveys of Geophysics,

- Geophysical Journal International

Formal decision was not reached, but it appears that an International English version should be much appreciated in addition to a Chinese-English journal.

JZ proposed to list the potential papers before contacting the different journals. An email to participants should be sent soon. JZ also pointed that if a special issue is planned, it will be important that final version be completed within the next two years.

[4] International EMSEV2018 workshop.

Italians colleagues (Prs Valerio Trumatoli and Vincenzo Lapenna) officially confirmed their wish to hold the next EMSEV meeting at the University of Basilica, Potenza, Italy, in 2018. The Seismological Research Center run by the University will be involved. Others Institutions such as the University of Naples and Bari might be also involved. It was accepted by the assembly, and JZ gave formal acceptance.

Taking into account the success of the 2016 joint EMSEV-CSES workshop, the 4th CSES workshop could be combined with the EMSEV meeting. Further discussions need to be made with Pr Shen Xuhui, Chinese leader of the CSES mission, as well as with the Italian Space Agency.

This meeting could also precede or follow the IUGG-Magnetic Induction Workshop which could be held at the same spot. Support from the EU seems possible.

A second suggestion that the next EMSEV meeting be held at AISECT University in Bopal (India) was proposed by Prof. Gwal. Unfortunately, a formal explicit proposal was not received. This proposal could be considered for the next EMSEV meeting in 2020. Taiwan is also a candidate and may send a formal proposal.

[5] Leadership Reorganization.

JZ is chairman since 2007. Malcolm Johnston (MJ) is Vice-Chair since 2001 and both would like to step down. Both agreed to stay until 2018 on the request of the Assembly, while a new leadership is organized during the next few years.

Currently EMSEV has four types of members – “Bureau”, “Working Group Members”, “Corresponding Members” and “Collaborators” (such as Alain Bernard and V. Kossobokov). MJ proposed that, since “Working Group Members” are really “Country Representatives” with approximately two per country and since it is not clear what “Corresponding Members” means, it would be less confusing if the groups are called:

- EMSEV Bureau
- EMSEV Working Group – Country Representatives
- EMSEV Working Group Members
- EMSEV Collaborators

JZ suggested that the number of Collaborators from different fields should be increased. It would help EMSEV to interact more intensively with other fields of research.

On the need to replace Country Representatives, particularly those whose participation is becoming minimal or non-existent, TN suggested to apply the following guideline:

- 1) To open email discussion with the Bureau on each present EMSEV Members,
- 2) To contact members concerned by a lack of powerful participation,
- 3) To propose changes when it is needed.

JZ suggested that this reorganization should be completed before 2017.

Dimitar Ouzounov pointed out that we have no representatives from South America. We need to reach out to leaders of electromagnetic programs in Chile, Brazil, Peru, etc.

[6] Other Issues

Pr Xuebin Du, leader of the organization of the 2016 EMSEV-CSES meeting in Lanzhou, raised the following remarks: China has now more than 50 years of electromagnetic data. 1) many claims of prediction are likely to be made in the near future, and 2) signals before earthquakes are likely very complex and special efforts should be made for understanding first the physics of the earthquakes preparation.

Pr R. Singh responded with a question whether the data (and meta-data) will be shared with the international community in order to improve this issue.

[7] EMSEV Bureau (as of August 2016)

ZLOTNICKI, Jacques (Chair)
 JOHNSTON, Malcolm (Vice-chair)
 NAGAO, Toshiyasu (Secretary)
 LIU, Jann-Yenq (IAGA Liaison)
 HASHIMOTO, Takeshi (IAVCEI Liaison)
 HARINARAYANA, Tirumalachetty (India)
 LAPENNA, Vincenzo (Italy)

MELONI, Antonio (Italy)
KOREPANOV, Valery (Ukraine)
HUANG, Qinghua (China)
SINGH, Ramesh (India/USA)
UYEDA, Seiya (Japan, Former chair) (going to step down)

EMSEV Working Group member (National representative) (as of August 2016)

BIAGI, Pietro F (Italy)
BLECKI, Jan (Poland)
DEL NEGRO, Ciro (Italy) (going to step down)
DU, Xuebin (China)
EFTAXIAS, Konstantinos (Greece)
FRASER-SMITH, Anthony (USA)
FREUND, Friedemann (USA)
GOHKBERG, Mikhail (Russia)
GWAL, Ashok Kumar (India)
HAO, Jinqi (China) (going to step down)
HATTORI, Katsumi (Japan)
HOBARA, Yasuhide (Japan)
KOPYTENKO, Yuri (Russia)
Le MOUEL, Jean-Louis (France)
LU, Jun (China)
OUZOUNOV, Dimitar (USA)
PARK, Stephen (USA)
PARROT, Michel (France)
PULINETS, Sergey (Russia)
RYBIN, Anatoly (Kyrgyzstan)
SARLIS, Nicholas (Greece)
SASAI, Yoichi (Japan) (going to step down)
SINGH, Birbal (India)
SPICHAK, Vjacheslav (Russia)
STANICA, Dimitru (Romania)
STANICA, Dragos Armand (Romania)
SOLIDUM Jr., Renato (Philippines)
TRAMUTOLI, Valerio (Italy)
TUNCER, Mustafa Kemal (Turkey) (going to step down)
VALLIANATOS, Filippas (Greece)
VAROTSOS, Panayiotis (Greece)
WIDARTO, Djedi S. (Indonesia)
ZHAO, Guoze (China)