

IAVCEI

Commission on Statistics in Volcanology (COSIV)

Commission Leader:

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Annual Report 2011-2013

COSIV was established in 2007 with the aim:

“to foster statistical analysis of volcanological data. We promote the application of statistics to all aspects of analysis of volcanological data, but with particular regard to the forecasting of future volcanic activity and its potential effects. COSIV accomplishes this through workshops, special sessions at regularly scheduled meetings, and publications.”

COSIV has one leader, presently Mark Bebbington, who is informally assisted by a panel of four:
Warner Marzocchi (past leader)
Chuck Connor (Editor of “Statistics in Volcanology”, the commission’s journal)
Laura Sandri
Roberto Carniel

1. New Publication

The commission focus in the last two years has been to establish the journal “Statistics in Volcanology”, which is run as an online open access publication (<http://scholarcommons.usf.edu/siv/>) hosted by the University of South Florida. The editorial board is listed in the Appendix to this report, and the first article appeared online in December 2012. In keeping with the aims of the commission, submissions to “Statistics in Volcanology” are encouraged to fall within one of the following categories:

1. Research Articles:

These contributions describe new statistical methods in volcanology, case studies using existing methods, and related topics.

2. Review Articles:

These contributions include invited articles that summarize major developments in the field of statistics in volcanology.

3. Howto Articles:

These short contributions (generally less than 5000 words) describe a specific procedure, method, or technique used in the analysis of volcanological data.

The journal is seen as the most effective way to achieve the commission’s goals (2011 Four Year Report) of:

- 1) Providing a platform for the dissemination of statistical knowledge amongst academics and between researchers and civil defense authorities to improve analysis of volcanic data and hence ultimately lead to the development of better forecasting methods for volcanic hazards
- 2) Enabling interaction with statisticians in other areas in Earth Science and Mathematics

- 3) To encourage access and exchange of datasets – published datasets can be lodged to facilitate general access and to foster discussion
- 4) Determine and set standards – longer term it is expected that the activities of COSIV would enable IAVCEI to provide guidelines and protocols regarding appropriate analysis of stochastic data in a wide range of settings but particularly to quantify volcanic hazard and reduce volcanic risk.

2. New Website

The second accomplishment in the past two years has been the migration of the commission webpage to a stable hosting environment at <http://cosiv.rc.usf.edu/about>.

3. Workshops, Conference Sessions etc.

The other goal of COSIV is to organize and coordinate workshops and scientific sessions with a focus on statistical analysis of volcanological data. During the last two years, COSIV has been involved in a number of such initiatives:

3.1 Volcano Observatory Best Practices Workshop: Eruption Forecasting

11-15 September 2011, Erice, Italy.

Under the auspices of many organizations, including COSIV, as probabilistic eruption forecasting was one of the main elements. Intended to be the first of what may become a series of volcano observatory best practices (VOBP) workshops.

3.2 IUGG General Assembly

28 June – 7 July, Melbourne, Australia

Although a number of sessions on topics relevant to COSIV were organized, none were sponsored specifically by COSIV.

3.3 Cities on Volcanos 7

19-23 November 2012, Colima, Mexico

A session was invited on “Probabilistic evaluation of volcanic hazards” (Connor/Marzocchi/Bebbington), but it was later merged when none of the organizers were able to make the meeting.

3.4 IAVCEI 2013 Scientific Assembly

20-24 July 2013, Kagoshima, Japan

Two sessions have been organized under the auspices of COSIV:

4C “Forecasting Volcanic Hazards” (Marzocchi/Bebbington), with 37 presentations

4E “Testing Eruption Forecasts and Open Issues” (Bebbington/Bell), with 17 presentations

4. Commission Structure and Future Initiatives

A meeting is scheduled for the IAVCEI meeting in Kagoshima to bring the internal structure of COSIV into line with recent IAVCEI guidelines, and to discuss future activities. A follow-on workshop to the VOBP workshop has been mooted.

Appendix: Editorial Board, “Statistics in Volcanology”.

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