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NMSOP-2 ONLINE

2nd edition of the IASPEI New Manual of Seismological Observatory Practice (NMSOP-2) Now complete online

Twelve years have passed since the first printed edition of the IASPEI New Manual of Seismological Observatory Practice (NMSOP 2002). Some 2,000 hard copies are currently in use in more than 100 countries at seismological observatories, data and analysis centers, in teaching, research, and field applications, used as basic material in national and international seismology training courses, or by private enterprises and individual scientists. In 2006, Seismological Press Beijing published a two-volume hard cover edition in Chinese. Since that time also Russian translations of several NMSOP Chapters are in use at seismological observatories and analysis centers in Russia and other countries of the Commonwealth of Independent States (CIS). In 2010 the Badan Meteorologi Klimatologi dan Geofisika (BMKG) in Jakarta published with support of the Japan International Cooperation Agency (JICA) the first 3 Chapters of NMSOP in (Bahasa) Indonesian language. The first four Chapters have also been translated into Turkish, with translations of more Chapters said to be in preparation in both countries.

Such global acceptance and wide-spread use signaled a growing need for the kind of information provided by the NMSOP. Therefore, a rigorously updated and amended

Foreword



Dear readers,

A rigorously updated and amended electronic second edition, NMSOP-2, of the IASPEI New Manual of Seismological Observatory Practice (NMSOP) has now been completed and is available online.

Please read the report by Peter Bormann whose unfatigued work has allowed the second edition to be ready.

Three Regional IASPEI Commission conferences are coming up in the next months. Do participate actively!

Please keep on supporting all IASPEI activities!

Peter Suhadolc
Secretary General

electronic second edition, NMSOP-2, has now been completed. This version, as well as future ones, are professionally maintained, further developed and edited by the GFZ German Research Centre for Geosciences under a long-term commitment, the auspices of IASPEI and its Commission on Seismological Observation and Interpretation (CoSOI). All versions, including the slightly corrected 2009 electronic version of the first edition, are freely available and downloadable via <http://nmsop.gfz-potsdam.de>. This Website is mirrored by IASPEI (<http://www.iaspei.org/projects/NMSOP.html>) and the ISC (<http://www.isc.ac.uk/standards>).

NMSOP-2 is again the result of a great cooperative international effort: 80 authors from 25 countries have contributed to it and more than 90 experts from over 23 countries provided peer reviews. In total, NMSOP-2 comprises more than 2200 pages in the form of basic introductory topical chapters, complemented by data and specialized information sheets, tutorials, animations, manual and computer assisted exercises, program descriptions, and the most elaborate glossary of terms ever published so far in the fields of seismology, engineering seismology and closely related areas. Additionally, online links to many related external sources and institutions are provided.

The electronic version of NMSOP-2 has been implemented in several steps since 2012, as manuscripts became available after completed review, revision and editing. Future revisions of NMSOP will have to adopt this approach of piece-wise realization anyway. An overall revision within a fixed time frame of such a huge and topically complex publication which is based on mostly voluntary work and aiming at keeping closely abreast with newly arising topics and needs is no longer feasible and practicable. Moreover, the brainfather and current editor of NMSOP will no longer be available because of age and serious illness. Luckily, the newly chosen format permits easy upgrading and complementing of NMSOP in accordance with rapid developments and changing requirements. It also minimizes the need for an overall editorship by emphasizing

personal initiative and responsibility of all NMSOP authors, both current and future ones, for their contributions under the auspices of CoSOI/IASPEI. Authors will always have access, via the GFZ Chief Librarian, Mr. Roland Bertelmann (rab@gfz-potsdam.de), to the last versions of their contributed files for editing and modification. However, cross information should always be given to Peter Bormann (pb65@gmx.net), if papers in the current 2014 version are concerned and the future GFZ editor, Prof. Dr. Torsten Dahm (dahm@gfz-potsdam.de) and the new CoSOI Chairman, Prof. Dr. Thomas Meier (meier@geophysik.uni-kiel.de) have to be contacted on both current and forthcoming contributions. Both colleagues are particularly thankful and will carefully consider any proposal aimed at future improvements, the addition of new NMSOP items and be happy to welcome new committed authors. Thus, **NMSOP will become a truly dynamic publication in keeping with actual developments and needs.**

What is new? NMSOP-2 provides access and download options for many interactive computer programs on:

- Event location
- Ray tracing
- Seismogram analysis
- Parameter determination
- Instrument calibration
- Record filtering
- Fourier analysis
- Network modeling

Several NMSOP items have been complemented by animations (see IS 1.1) which can be activated within the text or downloaded. They illustrate striking features, such as:

- Ray propagation of different seismic phases through the Earth interior;
- Slowness differences of their propagating wavefronts on the Earth surface;
- Formation of related seismic records and travel-time curves in a regional network;


- Dependence of source radiation patterns on epicentral distance, fault strike, dip angle, and slip direction;
- Rupture propagation and energy release of great finite earthquakes in space and time;
- Development of earthquake clusters in space and time; with inferences on regional fault trends;
- Improvement of event location by iterative modification of source depth.

There is great interest in adding more of such educational tools. Authors of similar modules are invited to make them available as complementary material to relevant NMSOP topics.

Since NMSOP (2002) rapid developments have taken place in many fields of observatory seismology, such as sensor, digital data acquisition and exchange technologies, growing automation of data analysis, phase interpretation, event location and magnitude determination in near real-time based on both 3-component broadband as well as local, regional and global virtual seismic network data. Moreover, applications of seismological technologies and methods have been greatly expanded in volcano monitoring, rupture tracking of great earthquakes, microzonation and site effect studies, hazard assessment, earthquake and tsunami early warning, strong-motion, ocean bottom and engineering seismology as well as other fields. Also, new standards for magnitude measurements have been adopted by IASPEI resolution No. 1 at the 2013 Gotenburg Assembly. It recommends station and network operators as well as data centers to adopt these standards in day-to-day operation and encourages the developers of waveform processing programs to incorporate these standards within their software packages. All this necessitated the upgrading of practically all existing NMSOP chapters and related auxiliary materials. Three new main Chapters (14-16) as well as dozens of new information sheets, complementary exercises and tutorials had to be added, thus amounting in some 1000 additional pages.

New is also that each contribution has now its own DOI-number, list of references and the full author contact information. Items with more than 20 pages are additionally preceded by a detailed list of contents for easy fast orientation. Regrettably, the originally planned and repeatedly announced committed Chapter 15 on “Seismological Contributions to Seismic Risk Mitigation” could not be realized because of the uncommitted drop-out of the author. Also, the revision of Chapter 6 on “Digital Seismic Data Acquisition Systems”, as well as the new IS 8.3 on “Seismic Waveform Data Retrieval” and IS 8.9 on “Digital Seismic Networks in Central America – Development, Exchange and Cooperation”, are still in the pipeline. The latter is a regional case study about the realization of a virtual seismic network operation between countries with often significant differences in available sensors, used processing and analysis software, network outlay, communication infrastructure and logistic conditions. It may provide useful guidance for the realization of similar initiatives in other regions that face similar challenges. These contributions final NMSOP-2 contributions are expected to be implemented on the website by late summer, respectively autumn 2014.

As the brainfather and editor of NMSOP for the last 20 years I sincerely wish to express my gratitude to all who have contributed actively to this manual, kept to their promises and sometimes even assisted me far beyond their duties as authors. The latter particularly applies to Mr. Bertelmann and his team at the GFZ library and computer center. Without their keen interest and unflagging efforts there would be no assured long-term stable and free of charge accessible electronic version of NMSOP that also meets modern bibliographical reference standards.


Peter Bormann

Kleinmachnow, 05.06.2014

**Planning & Managing
Scientific Research: A guide for the
beginning researcher
(NEW PUBLICATION)
by Brian Kennett**

A component of research training that is rarely emphasised is preparation for developing and running independent research projects.

A new Open Access book by Brian Kennett, a prominent earth scientist, is designed to fill this gap. Drawing on extensive experience in research, management and editorial matters, The short book describes how to establish projects, to manage them and develop communication, with illustrations from case studies. The work is addressed to research students and early career researchers, but has broader relevance.

“Planning and Managing Scientific Research : A guide for the beginning researcher” is published by ANU Press and is available for free download in PDF, EPub or Mobi formats from <http://press.anu.edu.au/titles/planning-and-managing-scientific-research/>.

Hard copies (A\$24 +postage) are obtainable by print-on-demand through the same web address.

The IRIS Data Services Workshop “ Managing Data from Seismic Networks” will follow the LACSC meeting in Bogota

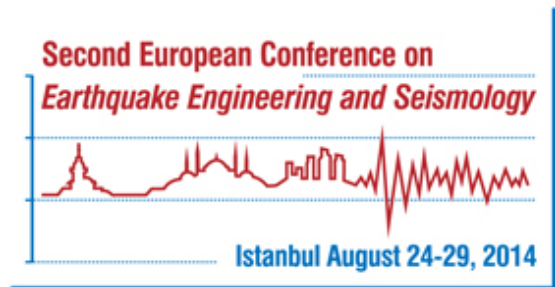
<http://www.iris.edu/dms/workshops/2014/07/managing-data-from-seismic-networks/>

**A joint event of the
15th European Conference on
Earthquake Engineering
and the 34th General Assembly of the
European Seismological Commission**

Istanbul, Turkey, August 23-25, 2014

<http://www.2eecesistanbul.org>

Please mark your calendars for this date!



**The 10th General Assembly of the
Asian Seismological Commission**

**Makati City, The Philippines,
November 17-20, 2014**

<http://asc2014ph.phivolcs.dost.gov.ph/>

Please mark your calendars for this date!



Asian Seismological Commission
Philippine Institute of Volcanology and Seismology
Geological Society of the Philippines
City of Makati

**2014 IASPEI Regional Assembly of the
Latin American and Caribbean
Seismological Commission**

Bogotá, Colombia, July 23-25, 2014

<http://geoslac.org/english/>





GEORISK 2014

“IMPROVING GEOPHYSICAL RISK ASSESSMENT, FORECASTING, AND MANAGEMENT”

November 18-21, 2014 Madrid, Spain

Scientific objective and scope of the meeting

The conference will analyze the state of the art of relevant aspects in geophysical risk assessment and management, including:

Modeling and monitoring of hazardous phenomena

Hazard assessment methods

Quantification of uncertainty in forecasting geophysical hazards

Decision-making models

Communication protocols

Vulnerability assessment methodologies

Education about geophysical risk

More information:

<http://www.georisk2014.com>



IUGG – GEORISK Commission

Meetings Calendar

A calendar of scientific meetings relevant to the interests of IASPEI scientists is maintained at:

<http://www.iaspei.org/meetings/forthcoming.html>

where more details can be found. We report below just the titles, dates, places and websites of the forthcoming meetings.

2014

Latin American Caribbean Seismological Commission (LACSC) Regional Assembly 2014

July 23-25, 2014, Bogota, Colombia

URL: <http://geoslac.org/english/>

IRIS Data Services Workshop

“Managing Data from Seismic Networks”

July 26-31, 2014, Bogota, Colombia

URL:

<http://www.iris.edu/dms/workshops/2014/07/managing-data-from-seismic-networks/>

ESC General Assembly 2014

(joint with EAEE, 2nd ECEES)

August 24–29, 2014, Istanbul, Turkey

URL: <http://www.2eecesistanbul.org>

EMSEV 2014

September 21-27, 2014, Konstancin Jeziorna, Poland

URL: <http://emsev2014.cbk.waw.pl/>

International Workshop on Mega Earthquakes and Tsunamis in Subduction Zones: Forecasting Approaches and Implications for Hazard Assessment

October 6-8, 2014, Rhodes Island, Greece

URL: <http://www.gein.noa.gr/metsz/>

ASC General Assembly 2014

November 17-20, 2014, Makati City (Manila), The Philippines

URL: <http://asc2014ph.phivolcs.dost.gov.ph/>

2015

International Union of Geodesy and Geophysics (IUGG), General Assembly

22 June-2 July, 2015, Prague, Czech Republic

URL: <http://www.iugg2015prague.com>

Seismological Society of America (SSA) Annual Meeting

21-23 April 2015, Pasadena, California, USA

URL: <http://www.seismosoc.org/meetings>

General Information about IASPEI

The International Association of Seismology and Physics of the Earth's Interior is one of the eight Associations of the International Union of Geodesy and Geophysics [\[IUGG\]](#).

The other IUGG Associations are:

Int'l Association of Cryospheric Sciences [\[IACS\]](#)

Int'l Association of Geodesy [\[IAG\]](#)

Int'l Association of Hydrological Sciences [\[IAHS\]](#)

Int'l Association of Meteorology and Atmospheric Sciences [\[IAMAS\]](#)

Int'l Association for the Physical Sciences of the Oceans [\[IAPSO\]](#)

Int'l Association of Geomagnetism and Aeronomy [\[IAGA\]](#)

Int'l Association of Volcanology and Chemistry of the Earth's Interior [\[IAVCEI\]](#)

Scientific Assemblies

IASPEI holds an Ordinary General Assembly every four years in conjunction with each Ordinary General Assembly of IUGG. Between the General Assemblies, IASPEI holds a Scientific Assembly, sometimes meeting with one of the other Associations of IUGG.

Participation in IASPEI Activities

IASPEI welcomes all scientists throughout the world to join in research into Seismology. IASPEI is subdivided into a number of Commissions, many of which have working groups for the study of particular subjects in their general areas of interest. On occasion, these internal IASPEI groups issue their own newsletters or circulars and many maintain their own web sites. At the IASPEI Assemblies, the groups organize specialist symposia, invite scholarly reviews and receive contributed papers that present up-to-the-minute results of current research. The IASPEI web site gives, or provides links to, information on the range of IASPEI activities.

The IASPEI Web site

Information on IASPEI can be found at: <http://www.iaspei.org/>

Contacting IASPEI

The Secretary-General is the main point of contact for all matters concerning IASPEI.

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