



## **Report**

(for time span: November 2008 to June 2011)

**CoSOI Working Group** for the elaboration of the

### **Second (website) Edition**

of the

## **IASPEI New Manual of Seismological Observatory Practice (NMSOP-2)**

### **1. Membership of the Working group**

Prior to the IASPEI meeting 2009 in Cape Town the following colleagues had agreed to serve as active members in the WG and to make major contributions to the second edition:

Peter Bormann, Germany (Chairman)

George Choy, USA

Gary Gibson, Australia

Klaus-Dieter Klinge, Germany

Roger Musson, UK

Lars Ottemöller, UK

Stefano Parolai, Italy (GFZ, Germany)

Joachim Saul, Germany

Johannes Schweitzer, Norway

Masano Shinohara, Japan

Joachim Wassermann, Germany

### **2. Work accomplished during the reporting period**

- One contribution, originally planned only as an information sheet on automatic seismogram analysis, has matured into a new Chapter 16 because of the enthusiastic work of three young scientists (Kueperkoch, Meier, Diehl);
- a new Chapter 14 (Parolai) on the investigation of site response in urban areas by using earthquake data and seismic noise, has been completed;
- several other, already completely reviewed and revised Chapters have been significantly upgraded, expanded (up to some 30%) and finally edited: This applies to Chapters 5 (Wieland), 8 (Havskov and Ottemöller), 9 (Schweitzer et al.), 12 (Musson and CeciĆ) and 13 (Wassermann). The same is planned for Chapter 3, as soon as still missing major sub-chapters by contributing authors (e.g., on moment tensor solutions) become available.
- a major new Sub-Chapter on marine seismic observations (22 pp.) dealing with the planning, deployment, operation and data analysis of OBS stations and networks) has been contributed to Chapter 7 by M. Shinohara, K. Suyehiro, and H. Shiobara);
- NMSOP-2 will include the most complete glossary of seismological and earthquake engineering terms so far available. 180 pages of this extended glossary have already been compiled. This was achieved by merging, harmonizing and complementing the glossaries a) in NMSOP-1, b) by Aki and Lee (2002) in the IASPEI Handbook on

Earthquake and Engineering Seismology, c) by Lee (2009) on Rotational Seismology and d) by additional entries proposed by several NMSOP-2 authors. In total it will comprise some 2000 entries. Final editing and complementation is still under way.

- several new **extended information sheets** (e.g., on the CTBTO IMS and IDC by J. Coyne; on the Russian energetic  $K = \log E_s$  classification of earthquake strength and its relationships to the classical magnitude scales by P. Bormann, K. Fujita, K. Machey and T. Rautian), and **tutorials** (e.g., on consistent phase picking at local to regional distances by T. Diehl and on algorithms for seismic network optimization and performance assessment by P. Bormann) have been added.
- Several papers by P. Bormann et al. were published during the reporting period. They provide the required new information which will go into the upgrading and amendment of several not yet revised NMSOP Chapters and related complementary materials in Vol. 2.
- Three talks (one invited one) and two posters on NMSOP-2 topics have been prepared for presentation at the joint symposium S17/S18 during the IUGG General Assembly in Melbourne, July 2011.
- Introductions to **exercises for computer assisted seismogram analysis** using upgraded and freely downloadable SEISAN software are in the process of completion (L. Ottemoeller; expected to be available by July 2011).
- The same was originally planned for the Seismic Handler (SHM) software, for which K. Klinge was willing to adopt his in several training courses extensively tested set of exercises with guidelines and solutions to the upgraded SHM version. The software upgrading, however, could not be finished in due time. Whether this can be assured for 2012 is still uncertain.
- for Chapter 6 (Seismic recording systems) the editor had to engage two new authors because of the very recent complete drop-out of the originally committed author of the NMSOP-1 version of Chapter 6 (see section 3. below).

### 3. Difficulties faced during the reporting period

The last two bullet points under 2. hint already to some of the continuing difficulties which the chairman was facing since the beginning of the project (see WG report 2008). The situation aggravated during the present reporting period. Main obstacles for achieving completeness and timeliness in the realization of the original NMSOP-2 plan were:

- Many of the originally committed authors were obviously heavily overloaded with not foreseen priority projects and demands of their institutions;
- The chairman has often not been informed in due time of such temporary or lasting difficulties which these authors were facing and would significantly delay or even make unlikely their planned contributions. Thus the editor had no chance to look early enough for alternative contributors;
- Several WG members and other contributing authors did not respond on the chairman's proposals, urgent requests and deadlines set for manuscript submission. This made a well timed and efficient editorial work impossible;
- Serious health problems of the chairman since late 2008, with several months of hospitalization and time-consuming treatments drastically reduced the time available for the revision and amendment of the chairman's own many NMSOP manuscripts. Moreover, their efficient revision requires prior availability of all other contributions in order to assure proper mutual linking and editorial cross-referencing;

- Several promised reviews from external experts took up to a year of time or did not reach the editor at all. This delayed the manuscript revision by some key authors for many months although they had submitted their first drafts in due time.
- One of the most ambitious, urgently needed and explicitly promised new contributions to NMSOP-2, Chapter 15 on strong-motion recordings and data analysis for applications in earthquake risk mitigation, seismology and engineering could not yet be completed in due time because of the heavy involvement of the author into the organization of the IUGG General Assembly 2011 in Melbourne. As a new schedule for the first draft fall 2011 has now been envisaged and the final completion of the reviewed, revised and edited Chapter spring 2012 been agreed upon.
- As late as May 2011 the author of the NMSOP-1 Chapter 6 withdrew unexpectedly, without prior warning. Although two new authors could be engaged, already in June 2011 a first draft of a significantly upgraded and amended NMSOP-2 Chapter 6 will be available only by late 2011 and a peer reviewed and revised version not before spring 2012.
- Because of lacking feedback by the lead author of Chapter 10 on Seismic data formats, archival and exchange it is still unclear, whether he prefers to settle with some minor revisions already submitted in 2009 or to take up, as requested by the editor, to complement the NMSOP-2 version of Chapter 10 with some helpful diagrams and additional discussion on special formats and procedures applied in some advanced data acquisition, exchange and processing systems, such as Antelope, Earthworm etc., that are now widely used in many countries. In a last correspondence a year ago, where this alternative approach but more time-consuming revision had been indicated by the lead author he expressed that this be achievable by late 2010. If no clarification on this issue reaches the editor in the near future with a definite decision of the lead author on the preferred option and an assured final availability of a peer reviewed and revised version of Chapter 10 by spring 2012 than only the 2009 version can be included into NMSOP-2.

All these obstacles prevented the planned completion of NMSOP-2 by summer 2011 and its envisaged internet demonstration at the IUGG meeting in Melbourne. For deciding on the need for any future revisions, updating or complementing of NMSOP-2 items and soliciting suitable authors too take up this job the editor will return after spring 2012 to CoSOI, since his health conditions do not permit to accept any extension of his assignment.

#### **4. Summary, conclusions and thanks**

- The above said difficulties notwithstanding, the chairman remains committed to bring this project manuscript-wise to a decent end by spring 2012, Yet the full implementation of all the NMSOP-2 files on the Website of the GFZ library, providing them with doi numbers and the internal testing of their easy internet accessibility and mutual linking might not be achievable before the end of 2012. In any event, the work can only proceed as fast as the editors health conditions permit and still missing contributions will come in.
- The Central library of the GFZ German Research Centre for Geosciences in Potsdam remains committed to maintain and care for the electronic version of NMSOP-2 on its website, to permit direct links to it from the websites of the ISC as well as the IASPEI Commissions for Seismic Observation and Interpretation (CoSOI) and for Education and Outreach (CE&O), to provide all reviewed contributions with doi-numbers, to update and complement the originally posted NMSOP-2 contributions on the request

of CoSOI and/or the ISC provided that the editor and/or the chairman/NMSOP representative of CoSOI and/or the solicit the head of the GFZ library, Mr. Roland Bertelmann (E-mail: [rab@gfz-potsdam.de](mailto:rab@gfz-potsdam.de)), to arrange the replacement of old or addition of newly submitted IASPEI authorized files.

- Quite a number of key contributions to NMSOP-2 have already been fully completed, peer reviewed, revised and edited, some of them already more than a year ago (e.g., Chapters 5, 8, 9, 12, 13, 14, and 16 as well as several complementary contributions in Vol. 2). The editor considers it as not acceptable that the attribution of doi-numbers to these “early bird” contributions and their appearance/publication on the internet is now delayed for another year because of the remaining not yet available contributions. He will, therefore, negotiate with the GFZ library chief the possibility that these papers be put on the NMSOP website already this summer and be complemented step by step by other finally completed contributions. If this is possible, the editor will inform the respective authors in due time.
- The final completion of NMSOP-2 does no longer require a NMSOP-2 WG. It should formally be dissolved at the Melbourne meeting of CoSOI.
- CoSOI should, in the interest of the global user community, consider future upgrades and amendments to the electronic version of NMSOP-2 as one of the Commissions permanent tasks. To assure this, a committed “broadband” expert should be entrusted with monitoring future developments in the field of observatory practice, identifying needs for upgrading, reporting them to CoSOI, and proposing/organizing actions such as soliciting potential authors. The current editor will be available for such activities beyond spring 2012 only on a consulting base.
- Finally, I wish to thank all those contributors to NMSOP-2 who have done their very best to keep me always well informed, to submit their manuscripts in due time and to closely co-operate with me in the final revision and editing of their contributions.
- My sincere thanks go also to IASPEI and CoSOI for giving me the chance and moral support to work on the Manual project for 17 years.

Kleinmachnow, 22 June 2011

  
Peter Bormann

