

IASSAR Committee on Stochastic Methods in Structural Engineering.

Minutes from meeting of the Umbrella Committee at Newport Beach Marriott Hotel and Tennis Club, California, USA, 2:30pm-3: 30pm on Sunday afternoon, June 17, 2001.

Attendance by:

Guiliano Augusti (U. Roma “La Sapienza”), Jim Beck (Caltech), Jean-Guy Béliveau (U. St Vernant), Larry Bergman (U. of Illinois, Urbana), G.Q. Cai (Florida Atlantic University), George Deodatis (Princeton University), Sofia Diniz (NIST, Gaithersburg, USA), Ove Ditlevsen (DTU, Lyngby, Denmark), Dan Frangopol (U. of Colorado, Boulder), Roger Ghanem (Johns Hopkins University, Baltimore), Lori Graham (Johns Hopkins University, Baltimore), Achintya Haldar (U. of Arizona), Masaru Hoshiya (Musashi Institute of Technology, Tokyo), Ahsan Kareem (U. of Notre Dame), Sankaran Mahadevan (Vanderbilt University, Nashville), Osamu Maroyama (Musashi Institute of Technology, Tokyo), Thomas Most (Bauhaus University, Weimar, Germany), Arvid Naess (NTNU, Trondheim, Norway), Yasuki Ohtori (Central Research Institute of Electric Power Industry, Japan) Fabrice Poirion (ONERA), Helmut Pradlwarter (Leopold-Franzens University, Innsbruck, Austria), Wataru Shiraki (Kagawa University, Japan), Tcuyoshi Talcada (U. of Tokyo), Wilson Tang (Hong Kong University of Science and Technology), Jann Yang (U. of California, Irvine), Jim Yao (Texas A&M University College Station) (observer), Ray Zhang (Colorado School of Mines), Weigiy Zhu (Zhejiang University)

Excuses from: A.H.-S. Ang, Christian Bucher, Armen Der Kiureghian, Hiroshi Ishikawa, Bill Spencer, Kazimierz Sobczyk.

Agenda:

1. Welcome.

Minutes:

The chairman welcomed the attendees to the meeting. He stressed that more active member participation in the work of the SCs will be necessary for a successful work.

Agenda:

2. Suggestions to and approval of the agenda.
3. Approval of the minutes from the meeting in Baltimore, June 13, 1999.
4. Short reports on activities of subcommittees by chairmen or representatives.

Minutes:

SC1: Computational Stochastic Mechanics. Chairman G.I. Schuëller.

G. Deodatis reported on the task-groups of SC1:
Codified Design (R. Ghanem)

Parallel Computing (Bergman and Spencer)
Monte Carlo simulation – Efficient Algorithm (H.J.Pradlwarter)
Fragility Curves (G. Deodatis)

SC2: Stochastic Dynamics. Chairman Y.K.Wen.

Ditlevsen reported that Y.K.Wen wanted to step down as chairman and suggested Arvid Naess as a candidate for replacing him. However, considering that a state-of-the-art-report from SC2 is in good progress, Y.K.Wen was urged to proceed for some while as chairman, and he accepted to do so. Arvid Naess is asked to be next in command for later take over of the chairmanship (see about vice-chairmen below). Otherwise no report from SC2.

SC3: Structural Reliability and Optimization. No representatives were reporting.

SC4: Stochastic Material Models including Fatigue, Fracture and Damage. No representatives were reporting.

SC 5: Systems Identification and Structural Control. The just retiring chairman Masaru Hoshiya reported on the activities leading to a special session of the upcoming ICOSSAR'01 on system identification made by independent engineers, but based on the same set of given data.

Outside the minutes:

Two recent contributions to a state-of-the-art report of SC2 authored by G.I. Schuëller, H.J. Pradlwarter and C. Proppe (Equivalent Linearization (EQL) and Monte Carlo Simulation (MCS)) and by Thomas Most and Christian Bucher (Stochastic Stability) can be downloaded as pdf-files from the IASSAR home page on the address:
<http://www.ish.dtu.dk/iassar/SC2.htm>

Agenda:

4.1 Announcement of new chairmen of SC 3, SC 4, and SC 5.

Minutes:

SC3: Armen Der Kiureghian takes over from A.H.-S. Ang

SC4: Kazimierz Sobczyk takes over from James W. Provan

SC5: Jim Beck takes over from Masaru Hoshiya

The former chairmen were acknowledged for their services to the IASSAR CSMSE

Agenda:

4.2 Suggestion of extending the chairs by vice-chairmen.

Minutes:

It was agreed that it would be convenient for advancing the activity level of the SCs if each SC gets a “next in command” with title of vice-chairman or a similar title (a position interpreted as “assistant to the chairman”). Whenever needed, the vice-chairman assists the chairman by discussing and preparing SC matters together with the chairman before these matters are brought to the members of the SC. The vice-chairman shares responsibility with the chairman with respect to the activity level of the SC. The vice-chairman acts on behalf of the chairman at SC meetings where the chairman is absent.

Outside the minutes:

It is suggested that the chairman of the actual SC upon approval by the chairman of the Umbrella Committee appoints the person for the vice-chair.

At the SC3 meeting on June 20, Dan Frangopol was appointed as vice-chairman of SC3

Agenda:

4.3 Suggestion that the chairmen ask each member of their respective SC whether the member intends to contribute with active work planned to be made in the next 4 year period up to ICOSSAR'05 (see point 5), or whether the member wants to leave the SC.

4.4 Adding new young qualified and enthusiastic members to the SCs should have high priority. Recommendations of new committee members from participants in the UC meeting.

5. Discussion of a common project for all SCs: State-of-the-art work (or "handbook") on philosophy and methods within the topics of the SCs. Current working documents may conveniently be communicated through the IASSAR home page. The final "handbook" could be a web publication, possibly supplemented by special issues of "Structural Safety" or "Probabilistic Engineering Mechanics".

Minutes:

There was a general support to the suggestion that the SCs in the time up to the next ICOSSAR should work on a common "handbook" project. Such a project is quite ambitious, and may fail in the end. However, the project of writing a handbook of probabilistic methods in structural engineering as covered by the SCs could be kept as an ideal target even if the result in the end might be in a more modest state-of-the-art report.

The first draft should be open to all members of IASSAR for comments. The SC1, which has already some material ready, is urged to submit pdf-files to IASSAR (umbrella) to be made available by the IASSAR home page. If needed the drafts could be hidden to the public by introducing a password for its access. Copyright issues in context with web-publications were mentioned.

O. Ditlevsen is prepared to do the co-ordination for preparing the "handbook".

Outside the minutes:

At the SC3 meeting on June 20 the project was discussed. It was agreed that a handbook of authored chapters on the different relevant topics would have the best possibilities of progress. By this is understood that committee pinpointing should be kept on a reasonably low level leaving the essential responsibility to the individual authors of the chapters, after these have received comments from the SC members.

As an operational and useful first project Armen Der Kiureghian suggested that the SCs should produce a "vocabulary" of words and concepts in a style as exemplified by the Microsoft Bookshelf.

Agenda:

6. The IASSAR home page. Communication of Ph.D. course announcements, tutorial texts, software etc. Suggestions to additions and improvements.

Minutes:

It was suggested that the home page should have links to the home pages of the members of the SCs. Such links are already there for some of the members. Members are asked to communicate their web addresses to OD (od@mek.dtu.dk).

Outside the minutes:

The address of the IASSAR home page is changed to <http://www.ish.dtu.dk/iassar>

Agenda:

7. Discussion of the reason that the probabilistic methods have not penetrated much into advanced civil and mechanical engineering practice. Is this bold statement really valid to a serious degree? If so, can IASSAR do something about it by a new type of activity?

Minutes:

The audience showed optimism that stochastic procedures will be increasingly applied to engineering problems. S. Mahadevan reported on activities in the automotive industry (GM Chrysler) for risk assessments and planned in-house workshops. Looking back in history even matrix algebra took a long time to be finally applied in engineering. Hence the situations may not be that depressing. Prof. Tang suggested increasing the visibility to industry. A. Naess commented that we should start to convince our colleagues at the working place.

Agenda:

8. Other matters. (Nothing to this point)

August 28, 2001

Ove Ditlevsen and Helmut Pradlwarter (taking notes during the meeting)