

## EIGHTH MEETING of SC1

TO: Members

FROM: Chairman

DATE: ASCE-EMD 1999 Conference in Baltimore, USA June 13, 1999, 6 - 9 pm

VENUE: Johns Hopkins University, Baltimore, USA Gilman 44

AGENDA:

1. Welcome of members
2. Approval of the Minutes of the 7th meeting held in Notre Dame
3. Organizational Matters/Membership
4. Report on participation at meetings on Computational Stochastic Mechanics (all) -  
Participation in other Meetings (all)
5. Reports from the Working Groups
  - 5.1 Influence of Stochastic Computational Methods on the Development of Design Codes (Ghanem)
  - 5.2 Parallel Computing (Spencer/Bergman)
  - 5.3 Monte Carlo Simulation
    - a) Efficient Algorithms (Pradlwarter)
    - b) Fragility Curves (Deodatis)
6. Update of contributions of SC1 to the new IASSAR homepage
7. Further steps, tasks
8. Date and venue of next meeting
9. Other Business
10. Adjournment

**Minutes of the 8<sup>th</sup> meeting of IASSAR-Subcommittee 1 on Computational Stochastic Mechanics.**  
(Recorded and edited by R. Zhang)

The 8<sup>th</sup> meeting of the IASSAR subcommittee 1 was held on June 13, 1999, on the occasion of the ASCE 13<sup>th</sup> Engineering Mechanics Conference at the Johns Hopkins University. The meeting was chaired by G.I. Schueller with the participants of L. Bergman, G. Deodatis, O. Ditlevsen, A. Kareem, S. Mahadevan, F. Poirion, M. Shinozuka, B. Spencer, W. Wedig, and R. Zhang.

The minutes of the 7<sup>th</sup> meeting held in Notre Dame in August of 1998 were approved.

On the outreach of the committee members by participating other important relevant meetings addressing Computational Mechanics, Schueller reported that he is invited to deliver a keynote lecture on Computational Stochastic Mechanics-Recent Advances at the European Conference on Computational Mechanics on August 31-Sept. 3, 1999 (ECCM'99) in Munich, Germany, while Deodatis summarized the committee member activity in organizing one session in the 5<sup>th</sup> US National Congress on Computational Mechanics in August of 1999 to be held in Boulder, Colorado.

The report of progress of 5 working groups in the past year is as follows:

WG 1 has not made significant progress on the influence of stochastic computational methods on the development of design codes since the last report by R. Ghanem in Notre Dame. To make the WG1 more effective and progressive, Ditlevsen suggested to invite such pre-eminent researchers as E. Simiu into this working group since he has made significant contribution to and also actively promote the code development in the past years.

L. Bergman and B. Spencer reported that WG2 has currently been putting more effort than the last year on parallel computing. The progress report will be more substantial in the next meeting.

The progress of WG3 on Monte Carlo simulation in fragility curve was reported by G. Deodatis. In the past year, this group has been most actively working on constructing fragility curves by Deodatis, Der Kiureghian, Grigoriou and Shinozuka. It is expected that this task can be finished within a year.

[Poirion reported encouraging developments in France w.r.t. the utilization of stochastic computational methods in industry where the requirements of quality assurance are now given in probabilistic terms.](#)

G. Schueller, on behalf of H. Pradlwarter, reported the contribution of WG4 on Monte Carlo simulation -- efficient algorithm in two aspects: generation of input and stochastic structures. This task report triggers active and healthy discussion on how to demonstrate our product useful to public services and thus increase the influence of stochastic approach by our society. Specifically, Shinozuka encouraged to integrate stochastic approach into deterministic one, instead of competing with each other, while Ditlevsen addressed on solving what kind of physical mechanisms we can observe by using computer, i.e., the methods of stochastic computational mechanics.

Schueller suggested to put the minutes of the 6<sup>th</sup> SC1 at Kyoto in November of 1997 into the new IASSAR homepage, and encouraged to update the IASSAR homepage after each committee meeting.

In 2000, two major conferences have been identified related to the committee and society. One is MCS 2000, i.e., International Conference on Monte Carlo Simulation at Monte Carlo, Principality of Monaco on June 18-21, 2000. The other is PMC 2000, i.e., 8<sup>th</sup> ASCE EMD/SEI/GI/AD Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability at Notre Dame, IN, USA on July 24-26, 2000. The committee members are strongly encouraged to attend the above two conferences.

In referring to the future study, Shinozuka encouraged members to implement new concepts and advanced technology into research related to risk management. Similarly, Ditlevsen encouraged new thinking of the stochastic approach in its applications to materials.

The next meeting (9<sup>th</sup> meeting of SC1) was scheduled during June 18-21, 2000, on the occasion of MCS 2000 at Monte Carlo, Principality of Monaco.