

**Minutes of the IASSAR Committee on Computational Stochastic Mechanics, June 2  
2002, New York, NY USA**

Recorded by Lori Graham

**Note:** Please use a colour printer for attached Power Point slides (pp.4 – 26).

**In attendance:** G. Schueller (Chair), S. Arwade, J.O. Royset, E. Simiu, L. Bergman, S. Mahadevan, J.Z. Zhao, E.A. Johnson, Y. Ohtori, M. Gioffre, G. Dasgupta, S. Diniz (for E. Simiu)

After a welcome to the meeting by G. Schueller, the minutes of the 10<sup>th</sup> meeting held in Newport Beach, CA were approved.

G. Schueller received kind apologies for being unable to attend the committee meeting by K.K. Phoon, J. Beck, A. Naess, A. Kareem, A. Der Kiureghian, W.Q. Zhu, and A. Haldar.

**New Membership:** Three new members were nominated for membership in the committee: S. Arwade and K.K. Phoon (both recommended by M. Grigoriu), and S. Dyke (recommended by L. Bergman).

**Participation in meetings:**

WCCM'02: 5<sup>th</sup> World Conference on Computational Mechanics in Vienna Austria takes place July 7-12 2002. G. Schueller and M. Shinozuka have organized a symposium on "Computational Methods in Stochastic Mechanics and Reliability Analysis", consisting of a number of sessions.

Eurodyn: 5<sup>th</sup> European Conference on Structural Dynamics, Munich Germany, September 2-5, 2002 (<http://www.eurodyn2002.de/>).

ECCM'01: European Conference on Computational Mechanics was held in Krakow Poland. G. Schueller was there and noted that there was a keynote lecture on stochastic mechanics, as well as some sessions in computational stochastic mechanics, indicating that this would be a good conference for committee members to consider attending.

USNCCM: US National Congress on Computational Mechanics was held in Dearborn MI USA. R. Ghanem organized 5 or 6 sessions.

World Conference on Structural Control was held in Lake Como Italy. E. Johnson was in attendance and noted a number of sessions with stochastic dynamics problems.

USNCTAM: The 14<sup>th</sup> US National Congress on Theoretical and Applied Mechanics will be held in Blacksburg the last week in June. L. Graham will be attending but is not aware of any cohesive efforts to include stochastic mechanics in this conference.

Stochastic Structural Dynamics in 2003 will be held at the West Lake, China, celebrating the 80<sup>th</sup> birthday of Y.K. Lin ([www.cmee.zju.edu.cn/ssd2003/](http://www.cmee.zju.edu.cn/ssd2003/)).

2<sup>nd</sup> MIT-Conference on “Computational Fluid and Solid Mechanics”, June 17-20, 2003, again, will have several sessions on Stochastic Computational Mechanics, organized by G. Schuëller. Members of the committee are particularly encouraged to contribute ([www.secondmitconference.org](http://www.secondmitconference.org)).

ICASP conference will be held in 2003 in Berkeley, which should be of interest to members of our committee (<http://icasp9.berkeley.edu>).

USNCCM: The next USNCCM will be held in Albuquerque in the summer of 2003.

S. Wojtkiewicz & R. Graham will organize a Mini Symposium on Stochastic Mechanics ([www.esc.sandia.gov/usnccm.html](http://www.esc.sandia.gov/usnccm.html)).

ASCE EMD: The next Engineering Mechanics Conference will be held in Seattle in the summer of 2003 (<http://www.engr.washington.edu/~uw-epp/em2003/>)

PACAM Conference was held in Temuco, Chile, and had very few contributions relating to computational stochastic mechanics.

Fracture Mechanics Congress was held in Hawaii last December, and had surprisingly few contributions related to probability. This seems to be an area in which probabilistic methods could have some real impact.

#### **Other Comments:**

E. Simiu announced that NIST may have some upcoming activities relative to the World Trade Center investigations that may require probabilistic methods, specifically with respect to heat transfer and fire protection. Meetings about this issues are expected soon. E. Simiu will try to get copies of the full recent report by G. Corley’s committee on the World Trade Center that was recently released.

#### **Leadership Changes:**

Due to his upcoming responsibilities as Chairman of the ASCE Probabilistic Methods Committee and hence as a member of the Editorial Board of the ASCE *Journal of Engineering Mechanics*, G. Schuëller stepped down from the chair of this Sub Committee effective July, 2002. Therefore, G. Deodatis, currently vice chair, has agreed to take his place.

#### **Reports from Working Groups:**

*Note that all reports from working groups are available on the IASSAR website. Please note the new address: [www.iassar.mek.dtu.dk](http://www.iassar.mek.dtu.dk).*

- Influence of Stochastic Computational Methods on the Future Developments of Design Codes (R. Ghanem). R. Ghanem reported (in absentia) that this is still a work in progress, and there is nothing archival to report at this time. However, S. Diniz gave a presentation that is relevant to this thrust area, which described recent work performed at NIST (under the guidance of E. Simiu), on database-design. The powerpoint presentation of this report is attached at the end of these minutes.
- Parallel Computing (L. Bergman/B. Spencer/E. Johnson). E. Johnson reported that there was a draft document last year on parallel computing that has since been revised and submitted to *Probabilistic Engineering Mechanics*. In the meantime this paper has been accepted for publication under the condition to cut its overlength.

- Monte Carlo Simulations – Fragility Curves (G. Deodatis, E. Simiu). G. Deodatis is working on fragility curves for seismic engineering and E. Simiu is working on fragility curves for wind engineering. Since G. Deodatis was unable to attend the meeting, discussion of the work on fragility curves has been delayed until the next meeting.
- Monte Carlo Simulations – Efficient Algorithms (G. Schueller). G. Schueller made a presentation, the transparencies from which are attached at the end of these minutes (after the database-design approaches presentation).

**Further Steps/Tasks:**

All committee members are encouraged to contribute to the working group reports.

**Date/Venue of Next Meeting:**

The next meeting was set for the WCCM'02 in Vienna but has subsequently been cancelled. Therefore the next meeting will be next year at the 2<sup>nd</sup> MIT Conference on Computational Mechanics, organized by Prof. Bathe, June 17-20 in Boston, Massachusetts