

**ASME Technical Committee on  
Multibody Systems and Nonlinear Dynamics  
(TC-MSND)**

**Wednesday, September 5, 2007, 5:30-7:30 P.M.  
Room: Palma G, Rio All Suites Hotel & Casino, Las Vegas, NV**

**Minutes**

**Attendees**

**Members:** Om Agrawal, Kurt Anderson, Bala Balachandran, Olivier Bauchau, Alain Berlioz, Jin H. Choi, Harry Dankowicz, Peter Eberhard, Tamás Kalmár-Nagy, Walter Lacarbonara, Zheng-Dong Ma, John McPhee, Aki Mikkola, Noel Perkins, Christophe Pierre, Werner Schiehlen, Ahmed Shabana, Nobuyuki Shimizu, Subhash Sinha, Wan-Suk Yoo.

**Friends:** Eric Butcher, James Critchley, Javier Cuadrado, Javier Garcia de Jalon, Sung-Soo Kim, Michael Leamy, Tenreiro Machado, Peter Maisser, Rudranarayan Mukherjee, Andres Müller, Dan Negrut, Mohammed Omar, Hiroyuki Sugiyama, Zdravko Terze, Xiaopeng Zhao.

1. 5:35pm. Meeting was called to order by Technical Committee Chair, Kurt Anderson.
2. 5:40pm. Motion was made to approve the minutes of last meeting of the Technical Committee on Multibody Systems and Nonlinear Dynamics in Blacksburg VA, August 8th, 2006. Vote on this motion was unanimous to approve the minutes.
3. 5:45pm. Information concerning account balances was obtained from Kazem Kazerounian, University of Connecticut, DED treasurer. Profs. B. Balachandran and K. Anderson reported that the D'Alembert and Lyapunov Award account balances are both at about \$28k, while the MSND Technical committee account balance is at about \$13.5k. It would be desirable for the D'Alembert and Lyapunov Award account balances to reach \$40k, at which point they qualify for becoming ASME level awards.
4. 5:50pm. Profs S. Sinha and B. Balachandran reported key statistics concerning the IDETC 2007 conference, which totaled 1217 papers. The Conference on Mechanical Vibration and Noise (VIB) accepted a total of 255 papers for presentation, while the Conference on Multibody Systems, Nonlinear dynamics, and Control (MSNDC), accepted a total of 221 papers for presentation. 239 abstracts were submitted to the MSNDC conference, and 235 were accepted. 232 draft papers were submitted, and finally, 221 draft papers were accepted for presentation. The copyright form caused some problems and confusion in the process of final draft paper acceptance. A new, simplified copyright form is being developed, and should be used in future conferences. The online and printed programs exhibited discrepancies, due to timing issues. Cancellations of paper presentations at the conference should be reported by session chairmen to the conference chair.
5. 6:00pm. Prof. S. Sinha next reported on the status of the Journal of Computational and Nonlinear Dynamics. A special issue of the Journal was published in October 2006 in honor of Professor Phillip Holmes 60th birthday. A special issue on Discontinuous and Fractional Dynamical Systems is planned for April 2008. Journal publication is on track and has been submitted to Thomson Scientific for review for inclusion in the Journal Citation Reports (JCR). The main competitors to the journal are Nonlinear Dynamics (Springer Publication), International Journal of Nonlinear Mechanics (Elsevier Publication), Multibody System Dynamics (Springer Publication), and Communications in Nonlinear Science and Numerical Simulation (Elsevier Publication). It seems that the submission guidelines posted on the journal website are unnecessarily complicated; apparently, the format of the draft paper submission is unimportant. Posted guidelines should be revised. Basic statistics about the journal are summarized in the tables below.

|                              | <b>Jan. 06-Aug.07</b> | <b>Jan. 07-Aug.07</b> |
|------------------------------|-----------------------|-----------------------|
| <b>% of Papers Accepted</b>  | <i>31%</i>            | <i>24%</i>            |
| <b>% of Papers Rejected</b>  | <i>23%</i>            | <i>15%</i>            |
| <b>% of Papers Withdrawn</b> | <i>21%</i>            | <i>11%</i>            |

**Table 1.** Acceptance and rejection rates for submitted paper.

|                                      | <b>Jan. 06-Aug.07</b> | <b>Jan. 07-Aug.07</b> |
|--------------------------------------|-----------------------|-----------------------|
| <b>Submission to first reviewer</b>  | <i>0.5</i>            | <i>0.62</i>           |
| <b>First review to resubmission</b>  | <i>1.5</i>            | <i>2.7</i>            |
| <b>Resubmission to second review</b> | <i>2.4</i>            | <i>0.23</i>           |
| <b>Second review to final</b>        | <i>1.73</i>           | <i>0.76</i>           |
| <b>Submission to publication</b>     | <i>6.6</i>            | <i>4.31</i>           |

**Table 2.** Review timing (Time in months)

6. 6:10pm. Sub-committee reports.

- (a) Profs. K. Anderson and O. Bauchau reported on the status of the planning for the IDETC 2009, which will be held at the San Diego Convention Center, Aug. 30th-Sep. 2nd, 2009. A flyer announcing the Conference on Multibody Systems, Nonlinear dynamics, and Control has been drafted and the IDETC 2007 symposium organizer will shortly be sent Emails to prepare symposia and the IDETC 2009. The need for new symposia topics was emphasized, and committee members were encouraged to submit ideas for new symposia topics.

Considerable time was devoted to a discussion concerning coordination between the IFToMM Technical committee for Multibody Dynamics (TC-MBD) and the ASME Technical Committee on Multibody Systems and Nonlinear Dynamics (TC-MSND). The starting point of the discussion is that the IDETC conferences, held in odd years, attract the full membership of the TC-MSND, whereas the even year conferences draw a much smaller audience because these conferences are more focused on nonlinear dynamics, rather than multibody dynamics. For instance, 8 only of the 26 committee members attended the conference held in Blacksburg, VA in the summer of 2006, whereas the IDETC conferences in 2005 and 2007 each attracted 20 the 26 committee members.

Hence it was proposed to organize a “First International Conference on Multibody Dynamics” to be held in May 2008 under the combined auspices of ASME TC-MSND and IFToMM TC-MBD. Prof. Schiehlen also brought up the idea of creating an International Association for Multibody Dynamics, under the umbrella of the International Union for Theoretical and Applied Mechanics.

Many objections were raised. First, the summer of 2008 will be very busy and existing conferences have already been planned; maybe, the international conference should be postponed up to the summer of 2010. Second, will there be enough papers to be presented at this new conference? Third, should the International Association for Multibody Dynamics be created first and charged with the subsequent organization of the “First International Conference on Multibody Dynamics?” Fourth, should such conference be organized by ASME, or should it be an independent international conference with a looser association to ASME. Fifth, is it really necessary for the ASME TC-MSND to hold meeting on a yearly basis, or are the odd year meeting sufficient?

In view of the many contradictory arguments, it was decided to hold a straw poll concerning the desirability of an even year international conference. Seven votes were expressed in favor of this idea, seven against, and two abstentions. As a result of this straw poll, further discussions on the topic were stopped to avoid the issue to consume a disproportional amount of time of the committee meeting. The issue will be further investigated through email communications until a broader consensus can be reached.

Next, Profs. T. Kalmár-Nagy, K. Anderson unveiled the call for papers for the Multibody Systems, Nonlinear Dynamics and Control Student Paper Competition. Some discussion ensued concerning the rules of the competition, the student eligibility conditions, and authorship requirements. Prof. Anderson agreed that the regulations were probably imperfect, but that a broad consensus existed in favor on the student paper competition. Since extensive discussion of the rules and regulations had already occurred at

previous meetings of the committee, Prof. Anderson requested an up or down vote on the competition, arguing that rules and regulations could be modified later, once experience is gained with the first competition. The vote showed unanimous support for holding a student paper competition at the next IDETC in 2009, using the guideline, eligibility rules, and evaluation criteria for papers and presentation described in the document presented to the committee. Prof Dan Negrut and Eric Butcher, together with Dr. Rudranarayan Mukherjee, and Dr. James Critchley will help Prof. T. Kalmár-Nagy in the first student paper competition.

(b) Profs. O. Bauchau and B. Balachandran presented the nomination of three candidate members to the committee: Prof. Eric A. Butcher from New Mexico State University, Prof. Dan Negrut from the University of Wisconsin - Madison, and Prof. Richard L. Magin from the University of Illinois at Chicago. The three candidacies were discussed, but voting was postponed to the closed session at the end of the committee meeting.

(c) The process for nomination to the D'Alembert and Lyapunov awards was discussed and found to be adequate. Several suggestions were made to improve the awareness of these awards. 1) A short note could be added to email notifications of the Journal of Computational and Nonlinear Dynamics reminding authors and reviewers of the existence of the awards and requesting nominations for them. 2) A request for nominations could be sent to all IDETC conference attendees; the list of attendees is available through ASME. This could be done in addition to the announcement published in a number of relevant journals.

Here again it was mentioned that the endowment for this award should be increased to reach the \$40k level so as to qualify for an ASME level award.

(d) Sponsorship & Industry/Government. These issues were not discussed.

7. 7:05pm. New Business. The IDETC 2009, will be held at the San Diego Convention Center, Aug. 30th-Sep. 2nd, 2009. A flyer announcing the Conference on Multibody Systems, Nonlinear dynamics, and Control has been drafted and the IDETC 2007 symposium organizer will shortly be sent Emails to prepare symposia and the IDETC 2009. The need for new symposia topics was emphasized, and committee members were encouraged to submit ideas for new symposia topics. It was suggested that younger members of the community should be encouraged to organize new symposia as a way of gaining recognition. In addition to the symposia held at the IDETC 2007 conference, new symposia should be organized. Members of the committee were urged to suggest potential new topics. It was pointed out that Control seems to be underrepresented at the present time. Multi-physics problems, such as coupling of Multibody systems with fluids, should also be more present at the conference. The IDETC 2011 conference will be chaired by Prof. B. Balachandran.
8. 7:15pm. No new ASME Fellows were recognized at the meeting. Prof. Anderson requested the committee to nominate potential candidates for the grade of ASME Fellow. The only requirement for nomination is that the candidate must have been a member of ASME for 10 years continuous or more.

### **Members Only**

9. 7:20pm. Members only. Voting on three new member nominations took place. Profs. Eric A. Butcher and Dan Negrut won unanimous approval of the committee. The nomination of Prof. Richard L. Magin was rejected, one vote in favor, all others opposed.

The meeting adjourned at approximately 7:30pm.

Originally submitted by Olivier A. Bauchau.

Minor corrections (March 2010) by Harry Dankowicz