

31<sup>st</sup> International Conference on  
**Boundary Elements  
and Other Mesh  
Reduction Methods**

**2 – 4 September 2009**  
**New Forest, UK**



**ORGANISED BY:**

Wessex Institute of Technology, UK

**SPONSORED BY:**

International Journal of Engineering Analysis with  
Boundary Elements (EABE)

**CALL FOR PAPERS**

# BEM/MRM 31



A specially prepared CD  
exclusively for BEM/MRM 31  
participants, containing the  
papers presented at the previous  
five Conferences (2003 – 2008).



**WESSEX INSTITUTE OF TECHNOLOGY**  
*Advancing International Knowledge Transfer*  
[www.wessex.ac.uk](http://www.wessex.ac.uk)

## INTRODUCTION

The Conference on Mesh Reduction Methods and Boundary Elements (MRM/BEM), is recognised as the international forum for the latest advances of these methods and their applications in sciences and engineering.

The success of the meeting, since the first conference took place in Southampton UK in 1978, is an indication of the strength of the research being carried out by many different groups around the world. This continuous growth is a result of the evolution of the techniques from methods based on classical integral equations to techniques covering now a wide variety of mathematical approaches, the main objective of which is to reduce or eliminate the mesh. The mesh, a concept inherited from more primitive methods, such as finite differences and finite elements, is alien to the solution of the problem and dictated only by the limitations of first generation analysis techniques.

Since its beginning in 1978, the Conference has been successfully held each year and has produced a large number of volumes in which practically all main innovations in mesh reduction methods have been reported. The latest of these volumes, from 1993 onwards, are now incorporated in the Electronic Library of the Wessex Institute (<http://library.witpress.com/>) under the heading *Transactions of Wessex Institute*, where all abstracts and a number of papers are open access.

## WHO SHOULD ATTEND

The BEM/MRM Conference attracts a substantial number of well established and leading researchers in the field. The meetings have always had a special appeal to young researchers and are characterised by a friendly atmosphere in which delegates at different stages of their careers can interact with each other.

Engineers and scientists within the areas of numerical analysis, boundary elements and meshless methods will benefit from attending the meeting.

## CONFERENCE CHAIRMAN

**C A Brebbia**, Wessex Institute of Technology, UK

## INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE

**J T Chen**, National Taiwan University, Taiwan

**A H D Cheng**, University of Mississippi, USA

**V G DeGiorgi**, Naval Research Laboratory, USA

**G De Mey**, University of Ghent, Belgium

**E Divo**, University of Central Florida, USA

**J Dominguez**, University of Seville, Spain

**G Fasshauer**, Illinois Institute of Technology, USA

**A Galybin**, Wessex Institute of Technology, UK

**L Gaul**, University of Stuttgart, Germany

**G S Gipson**, Oklahoma State University, USA

**M S Ingber**, University of New Mexico, USA

**D B Ingham**, University of Leeds, UK

**M Kanoh**, Kyushu Sangyo University, Japan

**A J Kassab**, University of Central Florida, USA

**J T Katsikadelis**, National Technical University of Athens, Greece

**V M A Leitao**, Instituto Superior Tecnico, Portugal

**G R Liu**, National University of Singapore, Singapore

**G D Manolis**, Aristotle University of Thessaloniki, Greece

**W J Mansur**, COPPE/UFRJ, Brazil

**T Matsumoto**, Nagoya University, Japan

**K Onishi**, Ibaraki University, Japan

**D Poljak**, University of Split, Croatia

**V Popov**, Wessex Institute of Technology, UK

**H Power**, University of Nottingham, UK

**P Prochazka**, CTU Prague, Czech Republic

**J J Rencis**, University of Arkansas, USA

**T J Rudolph**, Iowa State University, USA

**B Sarler**, Nova Gorica Polytechnic, Slovenia

**E Schnack**, Karlsruhe University, Germany

**A P S Selvadurai**, McGill University, Canada

**L Skerget**, University of Maribor, Slovenia,

**V Sladek**, Slovak Academy of Sciences, Slovakia

**S Syngellakis**, University of Southampton, UK

**A Tadeu**, University of Coimbra, Portugal

**J Trevelyan**, University of Durham, UK

**W S Venturini**, University of Sao Paulo, Brazil

**O Von Estorff**, Technical University of Hamburg-Harburg, Germany

**L C Wrobel**, Brunel University, UK

**T W Wu**, University of Kentucky, USA

**B Yeigh**, Saint Louis University, USA

**S P Zhu**, University of Wollongong, Australia

## EABE MEETING

The Annual Meeting of the Editorial Board of the International Journal of Engineering Analysis with Boundary Elements and other Mesh Reduction Methods (EABE) will take place during the Conference. The Journal has successfully become the main publication not only for Boundary Elements but for many other papers in the important field of mesh reduction techniques.

Please pass these details on to other interested colleagues

## BENEFITS OF ATTENDING BEM/MRM 31

### COMPLIMENTARY PUBLISHED MATERIALS

**BEM/MRM 31 participants will receive the following complimentary published materials at registration:**

- 1** A hard copy of the BEM/MRM 31 Conference Proceedings, published by WIT Press, available at the time of conference registration.
- 2** A specially prepared CD exclusively for BEM/MRM 31 participants, containing the papers presented at the previous five Conferences (2003 – 2008).
- 3** Information about relevant publishing services and activities.



### EXCLUSIVE WIT PRESS OFFER

**A 30% discount will apply to all WIT Press book orders at the time of the BEM/MRM Conference.**

**Look for further information on this conference and other activities organised by Wessex Institute of Technology at [www.wessex.ac.uk](http://www.wessex.ac.uk)**

### DISTRIBUTION OF PUBLISHED PAPERS

- All papers presented at BEM/MRM 31 and published in the associated proceedings, are reviewed by members of the Scientific Committee and other colleagues in the field. In addition to being available to delegates at the time of registration, the book will be publicised directly to researchers and institutional libraries and distributed worldwide through the international book trade. Papers presented at BEM/MRM 31 will be published by WIT Press in a volume of WIT Transactions on Modelling and Simulation (ISBN: 1-84564-164-7).
- Papers presented at BEM/MRM 31 will also be permanently archived online in the Transactions of the Wessex Institute Collection in a volume of WIT Transactions on Modelling and Simulation (<http://library.witpress.com>, ISSN: 1743-355x). The Collection provides the international scientific community with immediate access to individual papers presented at WIT conferences.
- Papers presented at Wessex Institute Conferences are referenced by Crossref and regularly appear in notable reviews, publications and databases including Scopus, Compendex, ISI Web of Knowledge, Index to Scientific & Technical Proceedings, ProQuest and Scitech Book News. All conference books are archived in the British Library and American Library of Congress.
- WIT Press is committed to Open-Access and offers authors the option to make their work freely accessible to their colleagues through the Transactions of the E-Library.
- The conference books published by WIT Press continue to sell for a long time after the meeting has taken place. This is another demonstration of the prestige the scientific community attribute to the meetings organised by the Wessex Institute of Technology.



### WESSEX INSTITUTE OF TECHNOLOGY

The Wessex Institute of Technology (WIT) is an International Centre for Knowledge Transfer that fosters a number of key programmes within the research community.

The excellent reputation of the WIT Conference Programme held in different parts of the world continues to grow. This is just one of the initiatives offered by the Institute. Other activities include:

- Graduate Programmes at Master and PhD level
- Advanced Research
- Publications, including books and journals
- E-Publishing comprising the Transactions and Journals of Wessex Institute
- Services to industry

**FOR FURTHER INFORMATION VISIT  
[www.wessex.ac.uk](http://www.wessex.ac.uk)**

# BEM/MRM CONFERENCE SERIES

## PREVIOUS BEM MEETINGS

- 1978 Southampton, UK
- 1980 Southampton, UK
- 1981 Irvine (CA), USA
- 1982 Southampton, UK
- 1983 Hiroshima, Japan



- 1984 QE II (Southampton to New York)
- 1985 Como, Italy
- 1986 Tokyo, Japan
- 1987 Stuttgart, Germany
- 1988 Southampton, UK
- 1989 Boston (MA), USA

- 1990 Hokkaido, Japan
- 1991 Tulsa (OK), USA
- 1992 Seville, Spain
- 1993 Worcester (MA), USA
- 1994 Southampton, UK
- 1995 Madison (WI), USA
- 1996 Braga, Portugal
- 1997 Rome, Italy
- 1998 Orlando (FL), USA
- 1999 Oxford, UK
- 2000 Cambridge, UK
- 2001 Lemnos, Greece
- 2002 Sintra, Portugal
- 2003 Split, Croatia
- 2004 Bologna, Italy
- 2005 Orlando (FL), USA
- 2006 Skiathos, Greece
- 2007 New Forest, UK



From 1993 onwards the papers are available in the WIT library on the Web at:

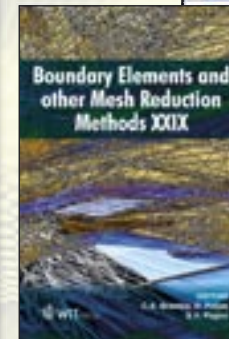
[http://www.witpress.com/acatalog/subject\\_boundary\\_elements.html](http://www.witpress.com/acatalog/subject_boundary_elements.html)

*(All abstracts and many papers are open access.)*

## BEM/MRM 2007 PROCEEDINGS

The Proceedings of Boundary Elements and Other Mesh Reduction Methods XXIX, 352pp (ISBN: 1-84564-076-7) are available in hard back from WIT Press priced at £115/US\$225/€172.50.

Papers from the conference are also hosted online in the WIT eLibrary as Volume 44 of WIT Transactions on Modelling and Simulation (ISSN: 1743-355X). For more details, as well as additional papers presented at previous BEM/MRM Conferences, visit the WIT eLibrary at <http://library.witpress.com>.



## OPEN-ACCESS

WIT Press is committed to Open-Access. We strongly believe that removing barriers to research published online will greatly aid progress in many scientific and technical disciplines.

## THE BEAUTIFUL NEW FOREST

The New Forest is one of the UK's premier tourist destinations. It offers various attractions for visitors all year round including picturesque forest villages, as well as beautiful scenery. It is located in Southern England, spreading over 150 square miles and spilling into parts of Hampshire, Dorset and Wiltshire. In the New Forest the well-being of the animals and the special needs of the countryside come first. The Forest is unarguably recognised as one of the most unique and important wilderness areas in Western Europe.

### CONFERENCE VENUE

Ashurst Lodge is the home of the Wessex Institute and is located in the beautiful New Forest. The Lodge is situated only 10km from the centre of Southampton, and has excellent rail connections with London (100km). It is also reasonably close to the two main airports in Britain – Heathrow (90km) and Gatwick (120km).

Ashurst Lodge is an ideal venue for conferences and boasts a newly built conference centre, and an excellent standard of accommodation for visitors. The surroundings are equally attractive to those who enjoy walking, horse riding, cycling, sailing and fine landscapes.



### GETTING TO THE NEW FOREST

**By Air:** The UK's two largest airports, London Heathrow and London Gatwick, offer excellent connections by road and rail to Southampton and the New Forest. Southampton and Bournemouth International Airports are only a short distance from Ashurst lodge and offer good local transport connections.

**By Land:** Travel by hire car, bus and train is convenient in the New Forest. Southwest trains mainline service from London Waterloo stops throughout the Forest, and a comprehensive bus service is operated by Wilts & Dorset Buses and Solent Blue line in the Southampton and New Forest area.

### ABSTRACT/PAPER SUBMISSION

**Abstract (300 words):**

*Submit to Conference Secretariat as indicated on the Abstract Submission Form.*

**Paper Submission:**

*Date to be advised after submission of abstracts.*

### BENEFITS OF ATTENDING

- Keep up-to-date with the latest advances in the field.
- Present your research within a unique forum.
- Collaborate with experts from around the world.
- Your conference paper will be reviewed by members of the Committee and other colleagues and will be rapidly processed for prompt publication in book form.
- In addition, all papers in the conference book will be permanently archived in the Transactions of the Wessex Institute on our eLibrary site, where they will be available to the international scientific community.
- Papers presented at Wessex Institute Conferences appear regularly in notable reviews, publications and databases.

### CONFERENCE SECRETARIAT

**Rachel Swinburn  
Conference Manager**

**BEM/MRM31**

WESSEX INSTITUTE OF  
TECHNOLOGY  
Ashurst Lodge, Ashurst  
Southampton SO40 7AA, UK

Tel: + 44 (0) 238 029 3223

Fax: + 44 (0) 238 029 2853

Email: [rswinburn@wessex.ac.uk](mailto:rswinburn@wessex.ac.uk)



# ABSTRACT SUBMISSION FORM

## BEM/MRM 31, 2 – 4 September 2009, New Forest, UK



### CALL FOR PAPERS

Papers are invited on the topics outlined and others falling within the scope of the meeting. Abstracts of no more than 300 words should be submitted **as soon as possible**. We strongly encourage the submission of abstracts electronically.

Abstracts should clearly state the purpose, results and conclusions of the work to be described in the final paper. Final acceptance will be based on the full-length paper, which if accepted for publication, must be presented at the conference. To be fair to all participants, each registered delegate will only be able to submit one paper.

*The language of the conference will be English.*

### CONFERENCE TOPICS

- Advanced Meshless and Mesh Reduction Methods
- Heat and mass transfer
- Electrical engineering and electromagnetics
- Fluid flow
- Advanced formulations
- Computational techniques
- Advanced structural applications
- Dynamics and vibrations
- Damage mechanics and fracture
- Material characterisation
- Financial Engineering Applications
- Stochastic Modelling
- Emerging Applications

### ABSTRACT SUBMISSION

#### Email Submission

**Email:** [rswinburn@wessex.ac.uk](mailto:rswinburn@wessex.ac.uk)  
Please submit your abstract with BEM/MRM 31 in the subject line. Include your name, full address and conference topics.

#### Web Submission

[www.wessex.ac.uk/bem31](http://www.wessex.ac.uk/bem31)

#### Fax Submission

**Fax: 44 (0) 238 029 2853**  
Fax one copy of your abstract with this completed Enquiry Form.

#### Mail Submission

**Mail:** Rachel Swinburn, Conference Manager, BEM/MRM 31, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK. Please mail a copy of your abstract with this completed Enquiry Form.

**Telephone: 44 (0) 238 029 3223**

#### Please indicate your intention below:

- I intend to submit a paper and present it.
- I intend to participate in the conference, but will not be submitting a paper.
- I am interested in renting display space.

### YOUR DETAILS

Title (Prof/Dr/Mr/Mrs/Ms) .....

Initials ..... Surname .....

Organisation .....

Address .....

.....

Postcode/Zip .....

Country .....

Telephone .....

Fax.....

Email.....

I suggest this announcement should also be sent to:

Title: ..... Initials..... Surname .....

Email.....

*Wherever possible information about this conference will be sent to you by email.*

Regular conference updates  
are available at:  
[www.wessex.ac.uk](http://www.wessex.ac.uk)

*By completing this form, we understand that you are agreeable to receiving further information on this event and other activities which we believe will interest you. We will not disclose this information to third parties.*