An ECCOMAS Thematic Conference

XFEM 2011 is one of the Thematic Conferences of the European Community in Computational Methods in Applied Sciences (ECCOMAS) [www.eccomas.org]. XFEM 2011 is an IACM Special Interest Conference [www.iacm.info].

Location

The conference will be held at Cardiff University, Wales, UK.

Registration Fees

The registration fees, including social events, with early registration applicable if received before March 25, 2011 are:

	Early	Late
Delegates	£500	£600
Students	£300	£350

Social Programme

A social programme for delegates will be arranged, including a banquet at a local place of interest.

Conference Secretariat

Cardiff School of Engineering
Institute of Modelling and Simulation in Mechanics and Materials (MoSiM ^{2})
Cardiff University, Queen's Buildings, The Parade
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http://www.xfem2011.com

Plenary Lectures

· Prof. Olivier Allix, LMT Cachan, France
· Prof. Uday Banerjee, Syracuse University, USA
· Prof. Ted Belytschko, Northwestern University, USA (TBC)
· Prof. Alain Combescure, INSA Lyon, France
· Prof. John Dolbow, Duke University, USA
· Prof. Armando Duarte, University of Illinois at Urbana-Champaign, USA
· Prof. Nicolas Moës, Ecole Centrale de Nantes, France
· Prof. Natarajan Sukumar, UC Davis, USA

Semi-Plenary Lecturers

· Prof. Robert Gracie, University of Waterloo, Canada
· Prof. Anthony Gravouil, INSA Lyon, France (TBC)
· Prof. Amir R. Khoei, Sharif University of Technology, Iran
· Dr.-Ing. Stefan Loehnert, Leibniz, Universität, Hannover, Germany
· Univ.-Prof. Dipl.-Ing. Dr. techn. Günther Meschke, Ruhr Universität, Bochum, Germany
· Prof. Soheil Mohammadi, University of Tehran, Iran
· Prof. Timon Rabczuk, Bauhaus Universität Weimar, Germany
· Prof. Dr. Ir. L.J. Sluys, TU Delft, The Netherlands
· Dr. Garth N. Wells, Cambridge University, UK
· Dr. Qi Zhi Xiao, LUSAS FEA Ltd, UK
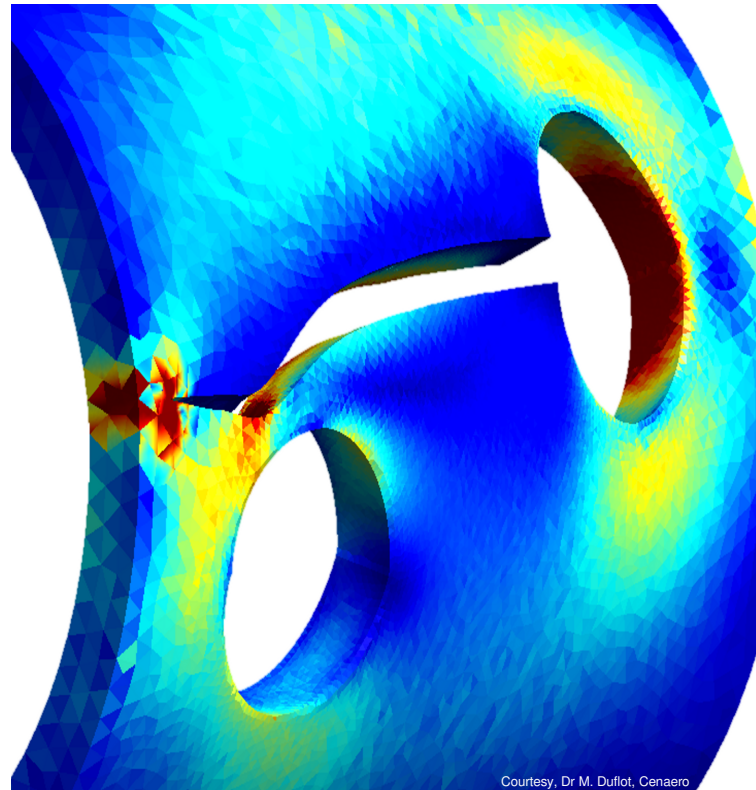
ECCOMAS Thematic Conference

XFEM 2011

International Conference on Extended Finite Element Methods

Partition of unity enrichment:
Recent developments and applications

29 June - 1 July, 2011, Cardiff, UK

An IACM Special Interest Conference

Courtesy, Dr M. Duflot, Cenaero

http://www.xfem2011.com

Objectives

The eXtended Finite Element Method (XFEM) along with the Generalized Finite Element Method (GFEM), hp clouds and enriched meshfree methods belong to the class of Partition of Unity Methods (PUM). This class of methods has played an increasingly important role to simulate various phenomena in engineering and science.

The principal feature of these methods is the ability to add, locally, an a priori knowledge about the solution to the approximation space. This enrichment allows to capture particular features such as discontinuities and singularities present in the solution exactly. XFEM in particular has been used successfully to solve crack initiation and propagation problems, multi-material systems, fluid flow with boundary layers, combustion problems, fluid structure interaction, growth of hydrogels and biofilms among others, with minimal meshing and remeshing of the moving boundaries involved.

XFEM 2011 is one of the successful series of ECCOMAS thematic events. The first edition was held in Aachen, Germany in September 2009. XFEM 2011 is a medium-size conference with a balanced participation covering both the theoretical aspects of the subject and engineering applications.

Conference Topics

- Solid and Fracture Mechanics
- Structural Optimization
- Fluid-structure interaction, multi-fluid, free-surface flow
- Multi-field problems
- Mathematical aspects: preconditioners, convergence, numerical integration, application of boundary conditions on moving interfaces, blending
- A priori/posteriori error estimation, adaptive schemes, hierarchical methods
- Coupling with advanced mesh generation methods
- Multiscale problems
- Parallelization of XFEM and level set algorithms, real-time simulations
- Enriched meshfree methods
- Identification: extended digital image correlation

Conference Chairmen

Prof. Stéphane P. A. Bordas, Cardiff University, Wales, UK
Prof. Bhushan Karihaloo, Cardiff University, Wales, UK
Dr. Pierre Kerfriden, Cardiff University, Wales, UK

Scientific Commitee

· Prof. Olivier Allix, LMT Cachan, France
· Prof. Ted Belytschko, Northwestern University, USA (TBC)
· Prof. Dr.-Ir. Rene de Borst, Eindhoven University of Technology, The Netherlands
· Prof. Alain Combescure, INSA Lyon, France
· Prof. Armando Duarte, University of Illinois at Urbana-Champaign, USA
· Dr. Marc Duflot, CENAERO, Belgium
· Dr.-Ing. Thomas P. Fries, RWTH Aachen University, Germany
· Dr. Juan José Ródenas García, Universidad Politécnica de Valencia, Spain
· Prof. Peter Hansbo, Chalmers University of Technology, Sweden
· Prof. Nicolas Moës, Ecole Centrale de Nantes, France
· Prof. Brian Moran, KAUST, Saudi Arabia
· Dr Angelo Simone, TU Delft, The Netherlands
· Prof. Natarajan Sukumar, UC Davis, USA
· Prof. Jon Trevelyan, Durham University, UK
· Prof. Dr.-Ing. Andreas Zilian, Technical University of Braunschweig, Germany

Call for Papers

One page abstracts of contributions related to the topics of the conference are invited to be submitted by January 17, 2011.
Authors have to register and submit their abstracts via the Conference Website. Notification of acceptance will be given by January 31, 2011.
Instructions for authors can be found in the conference website.

Important Dates

Deadline for presenting a one-page abstract	January 17, 2011
Acceptance of the abstract	January 31, 2011
Deadline for submitting a four-page extended abstract (optional)	April 4, 2011
Deadline for early payment	March 25, 2011
Deadline for late payment	May 27, 2011
XFEM 2011 conference	June 29 - July 1, 2011