

Particles 2009

25-27 November 2009, Barcelona, Spain

Conference Secretariat

International Center for Numerical Methods
in Engineering (CIMNE)

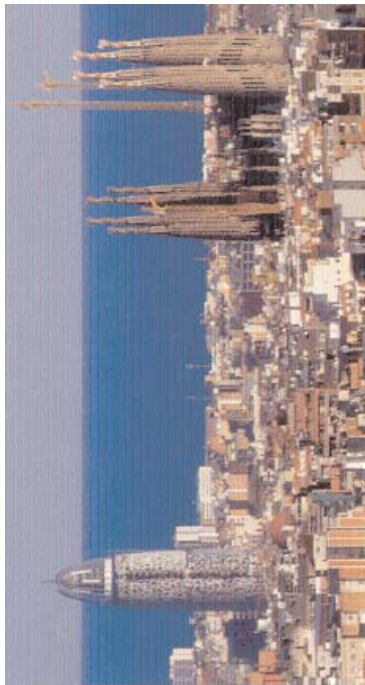
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<http://congress.cimne.upc.es/particles2009>



The old and the new in Barcelona

An ECCOMAS Thematic Conference

PARTICLES 2009 is one of the Thematic Conferences of the European Community in Computational Methods in Applied Sciences (ECCOMAS) www.eccomas.org

PARTICLES 2009 is also an IACM Special Interest Conference. More information about IACM on: www.iacm.info

Location

The conference will take place at the Technical University of Catalonia (UPC), Vertex Building, Plaza Eusebi Güell 6, 08034 Barcelona, Spain

Registration Fees

The registration fees in euro, including social events, with early registration applicable if received before **15 May 2009** are:

	Early	Late
Delegates	490 €	570 €
Students	280 €	300 €

ECCOMAS and IACM members will have a 5% reduction on the delegates fees.

The delegate fees will include:

Conference Proceedings; Attendance at all scientific sessions; Coffee breaks, reception and banquet

Social Programme

A social programme for delegates will be arranged, including a reception and a banquet at a local place of interest, as well as a social programme for accompanying persons.

Accommodation

Block reservations at preference rates will be arranged by the organizers. Detailed information will be available on the Conference site.

Supporting Organisations

- International Center for Numerical Methods in Engineering (CIMNE), Barcelona, Spain
- Swansea University, School of Engineering, Civil & Computational Engineering Centre
- School of Civil Engineering, UPC, Barcelona, Spain
- Universitat Politècnica de Catalunya (UPC), Barcelona, Spain
- European Community on Computational Methods in Applied Sciences (ECCOMAS)
- International Association for Computational Mechanics (IACM)

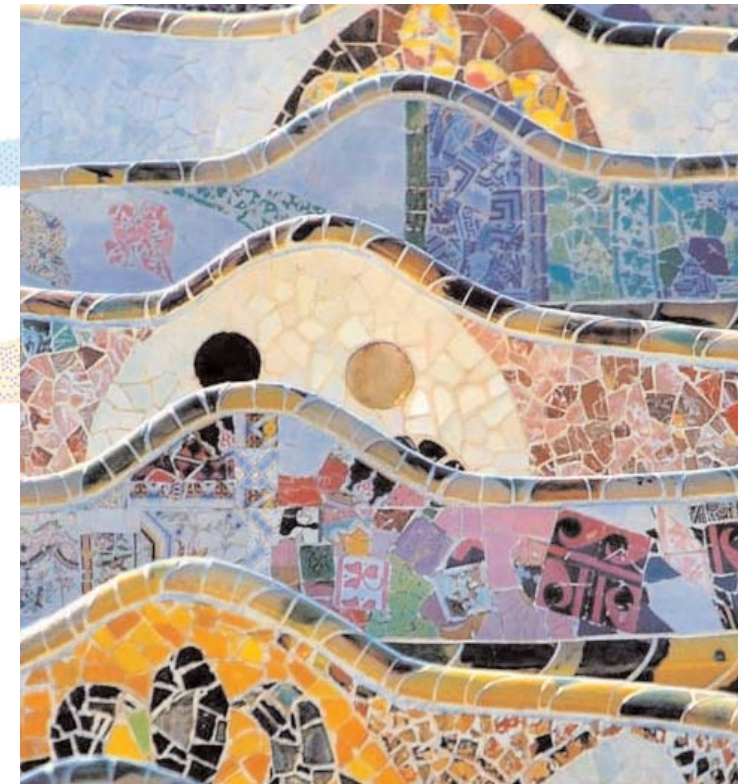


Particles 2009

International Conference on
Particle-Based Methods
Fundamentals and Applications

25-27 November 2009, Barcelona, Spain

An IACM Special Interest Conference



Gaudi benches at Güell Park, Barcelona, Spain

<http://congress.cimne.upc.es/particles2009>



View of Barcelona old Harbour

PARTICLES 2009

Barcelona, 25-27 November 2009

How to register and submit contributions

Authors are invited to submit their contributions on any of the conference topics. Submission of contributions and conference registration should be performed electronically via the conference web site.

<http://congress.cimne.upc.es/particles2009>

Organisers
 PARTICLES 2009 is a joint initiative of Universitat Politècnica de Catalunya (UPC) in Spain and Swansea University in UK.

Organising Committee

D.R.J. Owen (Chairman), Swansea University, UK
E. Onate (Co-Chairman), Univ. Politècnica de Catalunya, Spain

J. Bonet, Swansea University, UK
Y.T. Feng, Swansea University, UK
A. Huerta, Univ.Politécnica de Catalunya, Spain
S. Idelsohn, CIMNE, Barcelona, Spain
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Advisory Scientific Committee

T. Belytschko, Northwestern Univ., USA
M. Pastor, CEDEX/UPM, Spain
N. Bicanic, Univ. of Glasgow, UK
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J. Godard, Univ. San Diego, USA
S. Li, Chinese Academy of Sciences, China
A. Souto, Univ. Politéc. Madrid, Spain
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A. Minchinton, ORICA, Australia
G. Yagawa, Toyo Univ., Japan
J. Morris, Lawrence Livermore Labs, USA
F. Zárte, CIMNE/UPC, Spain
G. Mustoe, Colorado School of Mines, USA

Important Dates

Deadline for presenting one page abstract
15 January 2009
 Acceptance of the contributions and instructions
16 February 2009
 Deadline for submitting an extended abstract
15 June 2009
 and early payment
 Booking of hotel accommodation
ASAP

Objectives

PARTICLES 2009 will address both the fundamental basis and the applicability of state of the art particle-based computational methods that can be effectively used for solving a variety of problems in engineering and applied sciences.

Significant advances have been made in the discrete element method (DEM), the smooth particle hydrodynamic method (SPH), the particle finite element method (PFEM), the material point method, and atomistic and quantum mechanics-based methods, among others. The coupling of these methods with standard numerical procedures, such as the finite element method and also with meshless techniques offers new possibilities to solve complex problems in engineering and sciences with an accurate representation of the physical phenomena at nano, micro and macro scales. The applications of the particle-based methods addressed in the conference will cover geommechanical and mining problems, industrial forming processes, fluid-structure interaction problems accounting for free surface flow effects in civil and marine engineering (water streams acting on constructions, wave loads in harbours and maritime structures, ship hydrodynamics, etc.), multi-fracturing processes in impact situations, nano-micro-macroscopic effects in material science and bio-medical engineering, molecular dynamics, quantum mechanics problems, melting of polymers in fire situations and many others.

PARTICLES 2009 also aims to be a forum for practitioners in the computational mechanics field to discuss recent advances and identify future research directions for particle-based methods. Sessions related to specific topics of the conference will be introduced by a keynote Lecture in the field. Keynote Lectures will be complemented by Invited Sessions organised by recognised experts in targeted research areas of particle-based techniques as well as by contributed papers received from the general Call for Papers.

Conference Topics

(the list is not exhaustive)

- ### Fundamentals
- Atomistic methods
 - Discrete element methods
 - Innovative computational models
 - Material point methods
 - Meshless methods
 - Particle finite element methods
 - Smooth particle hydrodynamics
- ### Applications
- Bio-medical engineering
 - Composites
 - Computational chemistry
 - Contact problems
 - Damage, fracture & fatigue
 - Diffusion phenomena
 - Parallel processing systems
 - Nano-mechanics
 - Multi-phase flows
 - Multi-body systems
 - Multi-scale material models
 - Multi-physics problems
 - Multi-fracturing solids
 - Molecular dynamics
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