Location

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

Barcelona is a cosmopolitan city on the North East coast of Spain, within easy access to some splendid holiday resorts such as those on the Costa Brava. Barcelona itself is fascinating place, and has a unique blend of historical tradition, exciting architecture, nightlife and haute cuisine.

Preliminary Registration Fees

Registration fees are expressed in Euro. Early registration applicable if paid before May 25, 2015.

	Early Fees If paid by May 25, 2015	Late Fees If paid after May 25, 2015
Delegates	495 €	595 €
Students	355 €	415 €

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

Registration fees include: Conference proceedings, attendance at all scientific sessions, coffee breaks, reception and banquet.

Supporting Organizations:

- Universitat Politècnica de Catalunya (UPC), Spain
- International Center for Numerical Methods in Engineering (CIMNE)
- European Community on Computational Methods in Applied Sciences (ECCOMAS)
- International Association for Computational Mechanics (IACM)
- Computational Particle Mechanics, a Springer Journal

PARTICLES 2015

IV International Conference on Particle-Based Methods. Fundamentals and Applications

28 - 30 September 2015, Barcelona, Spain

http://congress.cimne.com/particles2015/

Objectives

The Fourth Conference on Particle-Based Methods (PARTICLES 2015) will be organised on 28-30 September 2015 in Barcelona, Spain. The previous three conferences on this series were held in Barcelona on 25-27 November 2009 and 26-28 October 2011, and in Stuttgart on 18-20 September 2013.

PARTICLES 2015 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.

The denotation "Particle-Based Methods" basically stands for two different computational models in solid and fluid mechanics.

On the one hand it represents discretization concepts in which the response of a continuum is projected onto "particles" carrying the mechanical information during deformations. Typical representatives are Meshless Methods, Smoothed Particles Hydrodynamics (SPH), Moving Particle Simulation (MPS), Particle Finite Element Method (PFEM), Material Point Method (MPM) and the Lattice-Boltzmann-Method (LBM).

On the other hand the notion expresses the computational representation of physical particles existing on different scales. Classical versions are Molecular Dynamics (MD) or the Discrete (Distinct) Element Method (DEM). Here either the particles exist a priori like in granular matters or they evolve during the loading process. In some cases the two models of discretization and physical particles are even interconnected.

PARTICLES 2015 covers both concepts because of their strong interrelation in their computation as well as application point of view.

Important Dates

Deadline for presenting a one page abstract	12 January 2015
Acceptance of the contributions	23 February 2015
Deadline for submitting the full paper (not mandatory) and early payment	25 May 2015

Organizing Committee

Eugenio Oñate (Chair) Univ. Politècnica de Catalunya, Spain

Co-Chairs:
Manfred Bischoff, Universität Stuttgart, Germany
Roger Owen, Swansea University, UK
Peter Wriggers, Leibniz Univ. Hannover, Germany
Tarek Zohdi, Univ. of California, Berkeley, USA

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- D. Wolf, Germany
- G. Yagawa, Japan
- F. Zárate, Spain
- X. Zhang, China

Conference Topics

Fundamentals

Discretization concepts
- Meshless methods
- Smoothed Particles Hydrodynamics (SPH)
- Moving Particle Simulation (MPS)
- Particle Finite Element Method (PFEM)
- Material Point Method (MPM) and the Lattice-Boltzmann-Method (LBM)

Physical particles procedures

- Molecular Dynamics (MD) or Discrete (Distinct) Element Method (DEM)

Applications

- Bio-medical engineering
- Composites
- Computational chemistry
- Contact problems
- Damage, fracture & fatigue
- Disintegration processes
- Earth and rock-fill dams
- Environment and geosciences
- Forming processes
- Free surface flows
- Geomechanics
- Geophysics
- Granulation processes
- High velocity impact and blast problems
- Industrial applications
- Melting of objects in fire situations
- Mixing processes
- Multi-body and non-linear dynamics
- Multi-fracturing solids systems
- Multi-physics problems
- Multi-scale material models
- Multiphase flows
- Nano-mechanics
- Oil and gas exploration and extraction
- Parallel processing
- Quantum mechanics
- Radiation damage
- Real time computing
- Ship hydrodynamics

ECCOMAS and IACM Support

PARTICLES 2015 is one of the Thematic Conferences of the European Community in Computational Methods in Applied Sciences (ECCOMAS)
www.eccomas.org

PARTICLES 2015 is a Special Interest Conference of the International Association for Computational Mechanics (IACM)
www.iacm.info