

## Particles 2013

18-20 September 2013, Stuttgart, Germany

### Conference Secretariat

International Center for Numerical Methods in Engineering (CIMNE)

Congress Management Department (CMD)

Campus North UPC

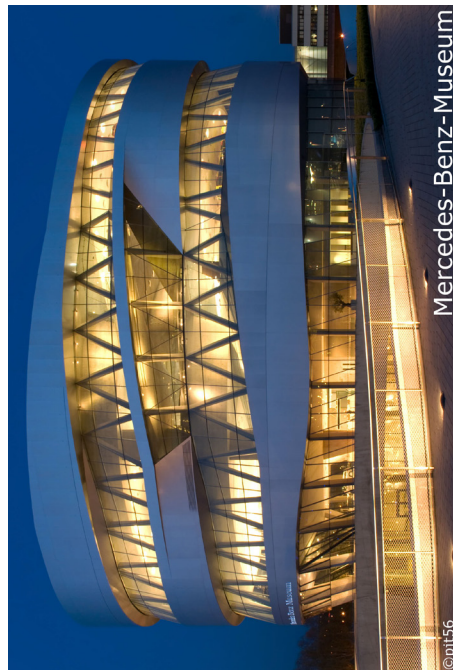
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<http://congress.cimne.com/particles2013>



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## ECCOMAS and IACM support

PARTICLES 2013 is one of the Thematic Conferences of the European Community on Computational Methods in Applied Sciences (ECCOMAS): [www.eccomas.org](http://www.eccomas.org)

PARTICLES 2013 is also a Special Interest Conference of the International Association for Computational Mechanics (IACM): [www.iacm.info](http://www.iacm.info)

## About Stuttgart

The city of Stuttgart, situated close to the black forest, is the capital of the State of Baden-Württemberg. It is one of the economically strongest regions in Europe, known for its automotive industry and many large and medium size companies. It can be reached via his international airport and also by high speed trains in 80 minutes from Frankfurt Airport. Usually the climate in September at the beginning of fall is very moderate.

## Registration Fees

Registration fees are expressed in Euro. **Early registration applicable if paid before 3 June 2013.**

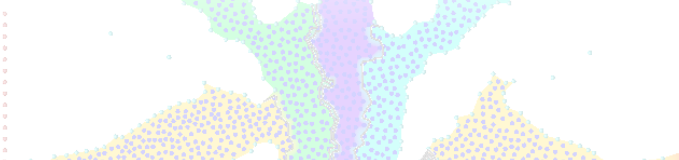
	Early	Late
<b>Delegates</b>	495 €	595 €
<b>Students</b>	355 €	415 €

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

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

## Supporting Organisations

- European Community on Computational Methods in Applied Sciences (ECCOMAS)
- International Association for Computational Mechanics (IACM)
- German Association of Computational Mechanics (GACM)
- Universität Stuttgart, Germany
- Leibniz Universität Hannover, Germany
- International Center for Numerical Methods in Engineering (CIMNE), Spain
- Swansea University, United Kingdom
- Universitat Politècnica de Catalunya, Spain



Thematic Conference

# Particles 2013

## III International Conference on Particle-Based Methods Fundamentals and Applications

18-20 September 2013, Stuttgart, Germany

An IACM Special Interest Conference



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<http://congress.cimne.com/particles2013>

## Objectives

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

**PARTICLES 2013** 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 2013** covers both concepts because of their strong interrelation in their computation as well as application point of view.

## Conference Topics (the list is not exhaustive)

### • Particle-based techniques:

*Discretization concepts:* Meshless Methods / Smoothed Particles Hydrodynamics (SPH) / Moving Particle Simulation (MPS) / Particle Finite Element Method (PFEM) / Material Point Method (MPM) / Lattice-Boltzmann-Method (LBM).

*Physical particles procedures:* Molecular Dynamics (MD) / 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 / Multiphase flows / Multi-physics problems / Multi-scale material models / Nano and micromechanics / Parallel processing / Quantum and molecular mechanics / Radiation damage / Real time computing / Ship hydrodynamics.

## Organizing Committee

**Manfred Bischoff (Chairman)**, Universität Stuttgart, Germany  
**Ekkehard Ramm (Honorary Chairman)**, Universität Stuttgart, Germany  
**Eugenio Oñate**, Universitat Politècnica de Catalunya, Spain  
**Roger Owen**, Swansea University, United Kingdom  
**Peter Wriggers**, Leibniz Universität Hannover, Germany

## Scientific Committee

N. Adams, Germany  
T. Belytschko, USA  
N. Bicanic, UK  
J. Bonet, UK  
P. Cleary, Australia  
G. Combe, France  
G. Cusatis, USA  
P. Dadvand, Spain  
A. Daouadji, France  
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P. Eberhard, Germany  
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M. Ellero, Germany  
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S. Luding, Netherlands  
L. McCue-Weil, USA  
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F. Nicot, France  
X. Oliver, Spain  
M. Pastor, Spain  
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C. Recarey, Cuba  
J. Rojek, Poland  
R. Rossi, Spain  
A. Serra, Spain  
B. Suárez, Spain  
M.A. Toledo, Spain  
H-R. Trebin, Germany  
J. R. Williams, USA  
G. Yagawa, Japan  
F. Zárte, Spain

## Important Dates

Deadline for presenting a one page abstract	<b>14 January 2013</b>
Acceptance of the contributions	<b>22 February 2013</b>
Deadline for submitting the full paper and early payment	<b>3 June 2013</b>

## Location

Particles 2013 will be held at the University of Stuttgart.

## Local Secretariat

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## 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.com/particles2013>