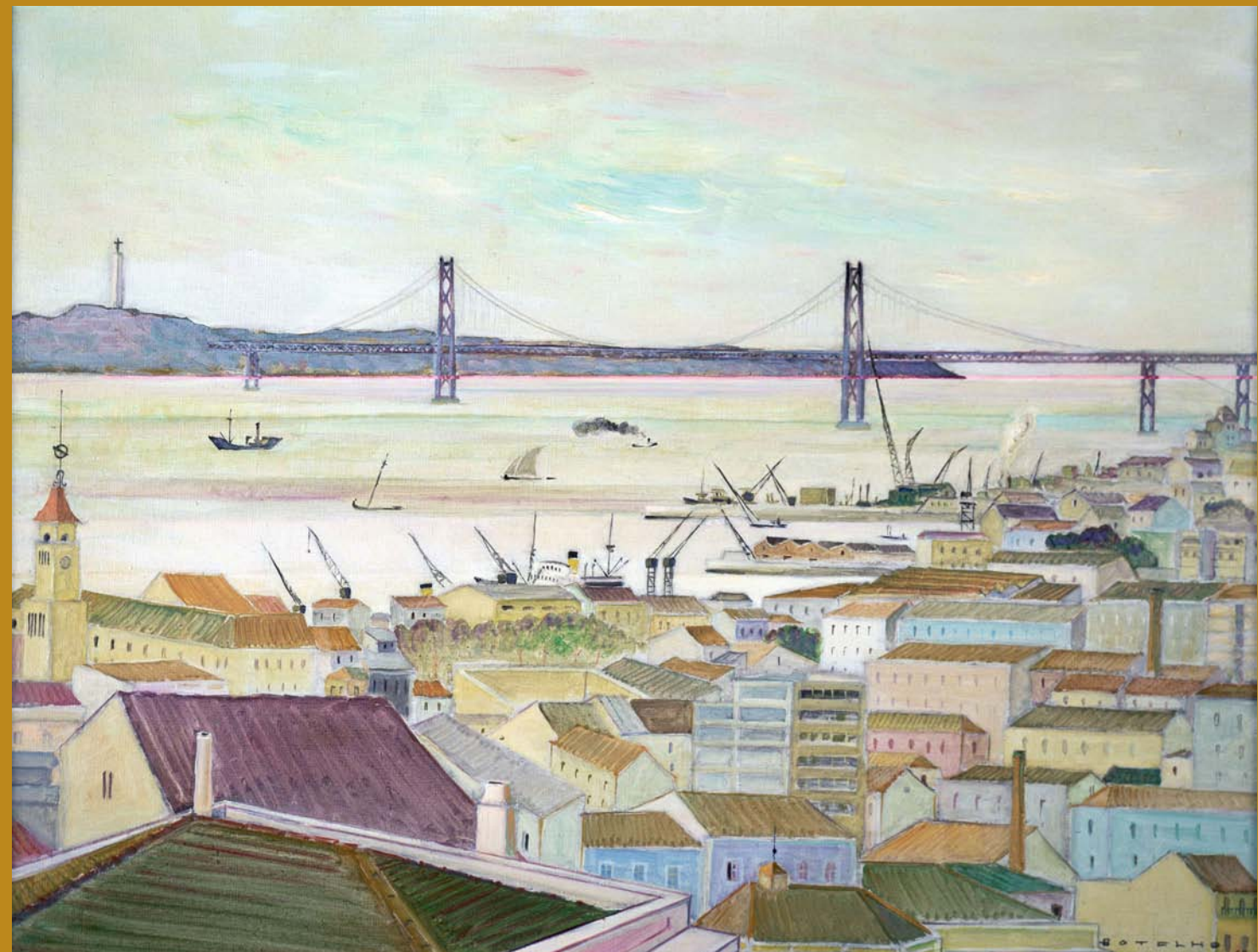


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The European Community
on Computational Methods in Applied Sciences

Lisbon,
Portugal
June 14th-17th
2010

CFD 2010

Fifth European Conference on Computational Fluid Dynamics



Homepage:

<http://www.eccomas-cfd2010.org>

Important Dates

Deadline for minisymposia proposals
January 10th, 2010

Deadline for submission of abstracts
January 10th, 2010

Notification of acceptance
January 31st, 2010

Deadline for early registration
March 15th, 2010

Submission of camera-ready manuscripts
March 31st, 2010

**Deadline for registration of contributors
to the proceedings**
April 15th, 2010

Registration Fees:

	EARLY REGISTRATION	LATER REGISTRATION
IACM/ECCOMAS Members	450 €	550 €
Non-IACM/ECCOMAS Members	500 €	600 €
Students and Mini-Symposia organizers	250 €	350 €
Accompanying person	150 €	175 €

The conference fee includes: Book of Abstracts, Conference proceedings on CD-ROM, Lunches (Portuguese typical buffet), Coffee/Tea during breaks, Welcome reception (Boat trip in Tagus River), Conference Banquet.

Student Registration does not include Conference Banquet and Welcome reception.

Accommodation

Hotel reservation has been arranged in a number of three and four stars hotels conveniently located at the Lisbon centre or near LNEC. Hotel Reservation and Conference Registration are made online: <http://www.eccomas-cfd2010.org/registrationinformation>
The congress special prices are as follows:

	Single Room/Person	Double Room/Person
Hotels ***	60-80 €	80-110 €
Hotels ****	70-100 €	110-140 €

Social Programme

The conference has a social programme for participants and accompanying persons. It includes a reception and conference banquet and an optional visit to Lisbon or Sintra for accompanying persons. Other optional tours will also be organized.

Congress Secretariat

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ECCOMAS/CFD 2010
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Background and Scope

The European Community on Computational Methods in Applied Sciences (ECCOMAS) announces the organization of the Fifth European Conference on Computational Fluid Dynamics (ECCOMAS CFD 2010) to be held in Lisbon June 14th – 17th 2010.

Previous editions of the very successful ECCOMAS CFD conferences were held in Stuttgart (1994), Athens (1998), Swansea (2001) and Egmond aan Zee (2006). Furthermore, computational fluid dynamics, computational mechanics and related fields have been a major topic at the ECCOMAS congresses held in Brussels (1992), Paris (1996), Barcelona (2000), Jvaskyla (2004) and Venice (2008).

The ECCOMAS CFD2010 conference includes invited plenary lectures, contributed papers from Academy and Industry, Minisymposia and Invited Special Technological Sessions.

Conference Local Organizers

Portuguese Association of Theoretical, Applied and Computational Mechanics (APMTAC) in cooperation with Instituto Superior Técnico of the Technical University of Lisbon and National Civil Engineering Laboratory.

Conference Venue

The Conference will be held in Lisbon, in the conference centre of the National Civil Engineering Laboratory, LNEC.

Address: Av. do Brasil, 101, 1700-066 Lisboa, Portugal. Web: <http://www.lnec.pt>

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Plenary Lectures

Francesco Bassi, University of Bergamo
Higher order Discontinuous Galerkin methods with emphasis on Aeronautical applications

Jean-Claude Courty, Dassault-Aviation, France
Industrial constraints and requirements for aeronautical flow control applications

Luc Vervisch, CORIA-CNRS & INSA Rouen, France
Turbulent combustion modeling: new approaches for highly refined simulations

Luís Eça, Technical University of Lisbon, Portugal
Code and Solution Verification in CFD: Examples for RANS solvers

Neil D Sandham, University of Southampton, UK
Global dynamics of transitional and turbulent separation bubbles

Petros Koumoutsakos, ETH Zurich
Bioinspired Flow Optimization

Thomas J. R. Hughes, University of Texas, USA
Isogeometric and Variational Multiscale Methods in Computational Fluid Dynamics

Tim Colonius, California Institute of Technology, USA
Computation and reduced order modeling for flow control

Wolfgang A. Wall, Technische Universität München, Germany
Coupling fields and scales in computational (bio) fluid dynamics – Advanced methods and applications

Topics for Contributed papers from Academy and Industry

Computational Fluid Dynamics Algorithms

Aerodynamics
Boundary layers and transition
Buoyant flows
Coastal and ocean fluid dynamics
Direct Numerical Simulation (DNS)
Environmental flows
Flows with heat transfer
Fluid-structure interaction
Free boundary flows
High-speed and chemically reacting flows
Hybrid RANS/LES methods
Large-Eddy simulation (LES)
Microfluidics
Multiphase flows
Natural hazards
Non-Newtonian and complex fluids
RANS models for turbulent flow simulation
Reactive and combustion flows
River and estuary dynamics
Shock waves

Computational Acoustics

Computational aero-acoustics (CAA)
Fluid and structure acoustics
Noise abatement in aeronautics
Noise abatement in the automotive industry
Noise control
Nonlinear acoustics
Smart materials and noise reduction

Computational Electromagnetics

Composite and complex media
Electromechanical systems

Call for Papers

Contributed Presentations

One-page abstracts of 20-minute presentations on topics related to the conference themes are invited.

Abstracts will be peer-reviewed. Abstracts of accepted contributions will appear in the conference book that will be available at the beginning of the conference. The full papers will be published in the conference proceedings, to appear on a CD-ROM that will be available also at the start of the conference. For the full papers, the templates available at the conference website must be used. Only papers from registered participants will be published.

The conference website “www.eccomas-cfd2010.org” will give updated information on the Scientific Program and practical arrangements of the conference

Minisymposia

The Conference will feature minisymposia in several emerging and mature areas of CFD and the list is in the Congress Web page. Each minisymposium will be organized as an invited parallel session with one or more coordinators.

Hybrid and multicriteria optimization
MEMS modelling
Numerical magnetohydrodynamics (MHD)
Scattering and inverse scattering
Semiconductor device modelling
Superconducting devices

Computational Mathematics and Numerical Methods

Artificial intelligence and expert systems
Data analysis techniques
Domain decomposition
Dynamical systems
Error control and adaptivity
Error estimation
Evolutionary algorithms
Geometry definition for complex configurations
GRID and High Performance Computing
Grid generation for CFD
High-order methods
Immersed and virtual boundary methods
Meshless and BEM Methods
Multigrid/multilevel methods
Multiple-scale physics and computation
Numerical algorithms for continuum approaches (FV, FD, etc.)
Numerical algorithms for inviscid and viscous flows
Numerical algorithms for particle methods (MM, DPS, SPH, LBM, Vortex Methods, etc.)
Numerical linear algebra
Parallel computing
Scientific visualization methods
Uncertainty adaptive grid techniques
Solution adaptive quantification methods
Wavelet methods

Optimization and Control

Aerodynamic design optimization
Automatic differentiation in CFD
Coupling/linkage methods of optimization techniques in CFD
Data assimilation and model coupling

Suggestions for topics are welcome provided that at least five (5) participants agree to submit abstracts. Please write your suggestions to

info@eccomas-cfd2010.org

including the main topic and the titles of at least five (5) possible contributions, with the Authors names.

The proposals will be reviewed by a scientific committee and in a maximum period of two weeks a Notification of Acceptance will be sent via e-mail to the organizer.

Evolutionary methods
Inverse problems
Neural networks
Optimal control of differential equations
Optimal design
Reduced order models and low complexity optimization
Shape and topology optimization for fluid flow

Computational Methods in Life Sciences

Biomimetics
Ecology/Epidemiology
Neurobiology
Numerical algorithms for Biofluid dynamics
Population dynamics
Physiological flows

Industrial Applications

Aeroacoustics
Aerodynamics
Aeronautics
Automotive engineering
Biomedical engineering
Chemical engineering
Electrical engineering
Electronics
Energy technology
Material processing
Medical applications
Microdevices
Naval architecture
Power generation
Process control
Ship hydrodynamics
Space technology
Sports engineering
System engineering
Thermal comfort in buildings
Traffic and transport
Turbomachinery