

Registration

Registration fees are expressed in Euro. Early registration applicable if payment is received before July 1st , 2012

	Early	Late
Delegates:	490	540

ECCOMAS and IACM members will have a 5% reduction on tariff for delegates.

Registration Fees will include: all course material, including the book "Isogeometric Analysis" by J.A. Cottrell, T.J.R. Hughes, and Y. Bazilevs, coffee and lunch breaks, reception and banquet, and wireless internet access.

Accommodation

The advanced school is scheduled just before the 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012), and will be held at the congress venue, viz., The University of Vienna.

Participants of the congress and the advanced school can arrange an extended stay at the **Hotel Academia** at preferential rates.

Please contact Mondial Congress & Events on:

eccomas2012@mondial-congress.com

to book your room during the advanced school and include "ECCOMAS Pre-Course Accommodation" in the email subject.

School Secretariat

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An ECCAM advanced school on Isogeometric Analysis Fundamentals and Applications

September 7-9, 2012, Vienna (Austria)

Under auspices of the ECCOMAS Committee for Computational and Applied Mathematics



<http://congress.cimne.com/igaschool2012/>

Objectives

Isogeometric Analysis (IGA) has emerged over the past years as a powerful methodology for approximating solutions to boundary-value problems in science and engineering. In isogeometric analysis, the same spline functions that are used for the CAD representation of geometries are also used as a basis for constructing the numerical approximation. Isogeometric analysis therefore offers the prospect of bridging the gap between computational design and computational analysis, enabling direct computational analysis of CAD-engineered objects.

In addition to the aforementioned unification of computational analysis and design, the increased smoothness of spline approximations, relative to traditional finite elements, enables new numerical approximation techniques for, for instance, shells, cohesive-zone models of failure, Cahn-Hilliard type phase-field models, and free-boundary and shape-optimization problems.

Isogeometric Analysis: Fundamentals and Applications

The advanced school *Isogeometric Analysis: Fundamentals and Applications* aims to acquaint its participants with the fundamentals of isogeometric analysis and its applications in fluid and solid mechanics. The course provides an introduction into spline technology, its use in computer aided design and engineering, and the use of splines to construct approximations to boundary-value problems. Furthermore, the course addresses the application of isogeometric analysis to applications where the higher-order smoothness provided by spline functions is indispensable, viz., shell theory, cohesive-zone models in failure mechanics, and free-boundary problems. The course ends with a treatment of more advanced topics, such as adaptiverefinement techniques in isogeometric analysis.

The advanced school is intended for graduate students and research professionals in computational engineering and applied mathematics. Although most of the material is self-contained, basic familiarity with differential equations and finite-element techniques is prerequisite.

Location

The advanced school will take place in Vienna, on **7-9 September 2012**, and is scheduled just before the **6th European Congress on Computational Methods in Applied Sciences and Engineering** (ECCOMAS 2012). It will be held at the congress venue, viz., The University of Vienna, Austria.

About Vienna

Vienna, the capital of Austria, 2 million inhabitants, is situated on the banks of the Danube. The influx of visitors from all over the world has made Vienna the most popular urban tourist destination in Austria. Vienna, also described as Europe's cultural capital, is a metropolis with unique charm, vibrancy and flair. It boasts outstanding infrastructure, is clean and safe, and has all the inspiration that you could wish for in order to discover this wonderful part of Europe. Vienna possesses a lively and vast array of cultural attractions. Sightseeing opportunities are to be found in abundance. Vienna has been synonymous with music for centuries, and was home to Mozart, Beethoven, Schubert and Johann Strauss. This outstanding musical heritage has been preserved right to the present day.

Organizers

Thomas J.R. Hughes, University of Texas at Austin, USA

Yuri Bazilevs, University of California at San Diego, USA

Trond Kvamsdal, NTNU, Trondheim, Norway

E. Harald van Brummelen, Eindhoven University of Technology, The Netherlands

Alessandro Reali, University of Pavia, Italy

Lecturers

Thomas J.R. Hughes, University of Texas at Austin, USA

Alessandro Reali, University of Pavia, Italy

Tor Dokken, SINTEF, Norway

Trond Kvamsdal, NTNU - Trondheim, Norway

Clemens Verhoosel, Eindhoven University of Technology, The Netherlands

Kris van der Zee, Eindhoven University of Technology, The Netherlands

Course Material

The course material consists of the book "Isogeometric Analysis" by J.A. Cottrell, T.J.R. Hughes, and Y. Bazilevs, (Wiley, 2009, ISBN: 978-0-470-74873-2), supplemented with auxiliary lecture notes. All course material will be provided free of charge to the participants at the start of the advanced school.