lectures

All lectures will be given in English. An electronic version of the lecture slides will be available for each participant.

registration

An attendance fee will be charged to cover costs associated with the lecture notes, the refreshments, a social program offer and one joint dinner. For early registration until August 29, an early registration fee of 200 € applies. After that the regular registration fee of 250 € will be charged.

A limited number of scholarships to waive the fee will be offered for eligible students who wish to pursue a PhD degree but have not yet finished their bachelor's or master's studies. Please inquire for eligibility in advance of the application deadline.

To apply for the summer school, please register by mail or Email using the form provided on the website.

important dates

6 August 2014	Deadline for application
20 August 2014	Notification of acceptance
29 August 2014	Deadline for early payment
8 September 2014	Deadline for regular payment
8-12 Sept. 2014	French-German Summer School

contact

Graduate School MUSIC
Leibniz Universität Hannover
Appelstraße 11A
30167 Hannover, Germany

Email: summerschool@music.uni-hannover.de
Internet: www.music.uni-hannover.de/summerschool.html

In cooperation with the
Franco-German University (FGU)
Internet: www.dfh-ufa.org

Université franco-allemande
Deutsch-Französische Hochschule

organizing committee

Dorit Schulte, Leibniz Universität Hannover
Christian Weißenfels, Leibniz Universität Hannover

location

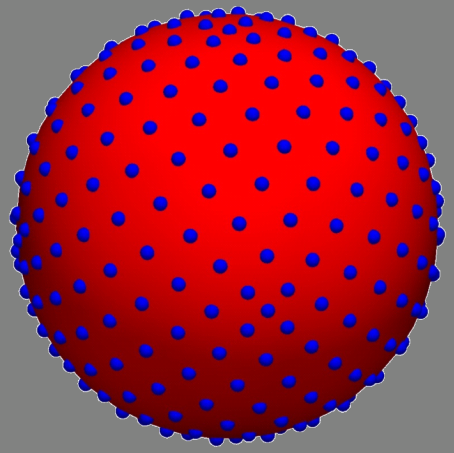
The summer school will be held on campus at Leibniz Universität Hannover.

The campus Herrenhausen / Appelstr. is located in the Nordstadt close to the antique main building and green areas such as the Herrenhäuser Gärten. This lively part of town, which combines both contemporary buildings and art nouveau architecture, is known also for cafés and restaurants with a student atmosphere. Located in walking distance of the downtown area, it is also served by two underground lines, line U4 to Garbsen and line U5 to Stöcken getting off at the stop "Appelstr.".

Detailed information regarding the location and a list of recommended hotels will be available on the summer school's webpage.

ViVaCE „Virtual Materials and their Validation: German-French School of Computional Engineering" - IRTG 1627

MARIO „Multifunktionale Aktive und Reaktive Interfaces und Oberflächen"



multiscale modeling of interfaces and advanced solution techniques

french-german summer school of the graduate school MUSiC

8-12 September 2014

Leibniz Universität Hannover, Germany

Graduate School MUSIC
Multiscale Methods for Interface Coupling

Leibniz Universität Hannover

multiscale modeling of interfaces and advanced solution techniques

The summer school focuses on theoretical and computational aspects of modern interface modeling. Leading experts from France and Germany give an introduction into the fields of fracture and contact mechanics, fatigue and failure analysis from a multiscale and multiphysics point of view. Each of the areas needs appropriate solution techniques, like Isogeometric Analysis, the eXtened Finite Element Method, the Mortar Method, the Non-intrusive Coupling and the Proper Generalized Decomposition which will be presented as well at the summer school.

audience

The summer school is intended as a compact overview of the latest developments in the focus area for current and prospective PhD students from Germany, France and abroad who work in relevant fields. Junior researchers and scientists from both academia and industry who wish to extend their knowledge into this area are also welcome.

about music

The Graduate School MUSiC (Multiscale Methods for Interface Coupling) is an interdisciplinary graduate school at Leibniz Universität Hannover. It is an umbrella organization that includes the research training groups IRTG 1627 of the DFG and MARIO sponsored by the land of Lower Saxony. It provides an interdisciplinary research and education platform for PhD students from different fields such as Mechanics and Computational Mechanics, Civil, Mechanical and Electrical Engineering, Computer Science and Applied Mathematics.

speakers

Olivier Allix
Professor at the Laboratory of Mechanics and Technology,
École Normale Supérieure de Cachan, France

Bircan Avci
Lecturer at the Institute of Continuum Mechanics
Leibniz Universität Hannover, Germany

Friedrich Gruttmann
Professor at the Institute of Solid Mechanics
Technische Universität Darmstadt, Germany

Pierre Ladeveze
Professor at the Laboratory of Mechanics and Technology,
École Normale Supérieure de Cachan, France

Stefan Löhnert
Senior Engineer at the Institute of Continuum Mechanics
Leibniz Universität Hannover, Germany

Laura De Lorenzis
Professor at the Institute of Applied Mechanics
Technische Universität Braunschweig, Germany

Hans Jürgen Maier
Professor at the Institute of Materials Science
Leibniz Universität Hannover, Germany

Udo Nackenhorst
Professor at the Institute of Mechanics and Computational Mechanics, Leibniz Universität Hannover, Germany

Raimund Rolfes
Professor at the Institute for Structural Analysis
Leibniz University Hannover, Germany

Werner Wagner
Professor at the Institute for Structural Analysis
Karlsruhe Institute of Technology, Germany

Christian Weißenfels
Lecturer at the Institute of Continuum Mechanics
Leibniz Universität Hannover, Germany

Peter Wriggers
Professor at the Institute of Continuum Mechanics
Leibniz Universität Hannover, Germany

lecture topics

Non intrusive coupling strategies & applications
(Olivier Allix)

Coupling of particles and fluids
(Bircan Avci)

Delamination of thin structures
(Friedrich Gruttmann)

PGD model reduction by Proper Generalized Decomposition
(Pierre Ladeveze)

Multiscale fracture mechanics and the XFEM
(Stefan Löhnert)

Isogeometric contact and multiscale modelling of interfaces
(Laura de Lorenzis)

Microscopic observations and macroscopic modeling
(Hans-Jürgen Maier)

Stochastic material modeling and numerical implementation
(Udo Nackenhorst)

Multiscale failure analysis of composites and optimization of imperfect shell structures
(Raimund Rolfes)

Interface damage of thin structures
(Werner Wagner)

Plasticity based frictional modeling
(Christian Weißenfels)

Multiscale methods for contact problems
(Peter Wriggers)