

registration

An attendance fee will be charged to cover costs associated with the lecture notes, the refreshments and one joint dinner. For early registration until August 21, an early registration fee of 100 EUR applies. After that the regular registration fee of 150 EUR 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 e-mail using the form provided on the website.

important dates

15 July 2010	Deadline for application
30 July 2010	Notification of acceptance
21 August 2010	Deadline for early payment
15 September 2010	Deadline for regular payment
15–17 September 2010	First MUSIC Summer School

contact

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organizing committee

Ilker Temizer, Leibniz Universität Hannover
Britta Hirschberger, Leibniz Universität Hannover

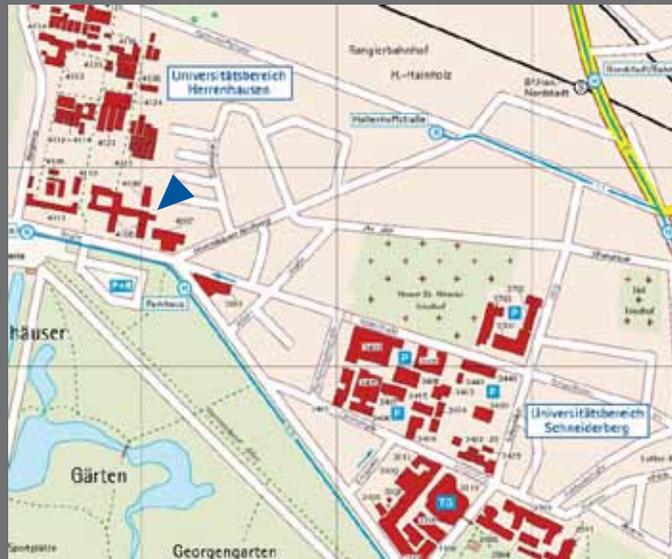
venue

The first MUSIC Summer School will be held on campus at Leibniz Universität Hannover.

The campus Herrenhausen / Appelstraße 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 Appelstraße.

Detailed information regarding the location and a list of recommended hotels will be available on the website.



multiscale and multiphysics modelling of interfaces

first summer school of the graduate school music

15–17 September 2010
Leibniz Universität Hannover, Germany



Graduate School
MUSIC
Multiscale Methods for
Interface Coupling



Leibniz
Universität
Hannover

multiscale and multiphysics modelling of interfaces

The summer school focuses on the modelling of multiphysics phenomena associated with interfaces from a multiscale point of view. Theoretical and computational aspects of adhesion and cohesive fracture, contact and friction at macro and micro scales as well as phase transformations and shape memory effects governed by material interfaces will be addressed by distinguished researchers in these fields both from an engineering as well as a materials science point of view.

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 and abroad who work in relevant fields. Junior researchers and scientists from both academia and industry who wish to extend their present research fields 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. Embedded into the university's Graduate Academy, 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.

lectures

All lectures will be given in English. A printed version of the lecture slides will be available for each participants.

speakers

Olivier Allix

Professor at the Laboratory of Mechanics and Technology (LMT)
École Normale Supérieure de Cachan, France

Marc Geers

Professor at the Department of Mechanical Engineering
Eindhoven University of Technology, The Netherlands

Jean-François Molinari

Professor at the Computational Solid Mechanics Laboratory (LMS)
École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

Stanisław Stupkiewicz

Associate professor at the Institute of Fundamental Technological
Research (IPPT), Polish Academy of Sciences, Warsaw, Poland

Peter Wriggers

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

preliminary time table

time	Wednesday 15 Sept	Thursday 16 Sept	Friday 17 Sept
9:00 – 10:00	Registration	Molinari	Stupkiewicz
10:15– 11:15	Allix	Geers	Wriggers
11:45 – 12:45	Allix	Geers	Wriggers
14:00 – 15:00	Allix	Geers	Wriggers
15:15 – 16:15	Molinari	Stupkiewicz	
16:45 – 17:45	Molinari	Stupkiewicz	
19:00		Banquet	

lecture topics

Interface and delamination: Basic aspects and multiscale issues

(Olivier Allix)

- Damage modelling of interface
- Multiscale aspects of delamination such as nonlocal effects
- Multiscale computation of delamination

Computational multiscale interfacial mechanics

(Marc Geers)

- Cohesive zone modelling across the scales
- Phase field modelling of diffuse interfaces
- Interfaces in metals and crystals

Molecular origins of friction

(Jean-François Molinari)

- Fundamentals about molecular dynamics
- Direct atomistic/finite-element coupling
- Microscopic origins of friction

Interfaces and interfacial energy in martensitic microstructures

(Stanisław Stupkiewicz)

- Crystallographic theory of martensite
- Micro–macro transition for evolving laminates
- Energy and size effects at microstructured interfaces

Multiscale methods for contact problems

(Peter Wriggers)

- Computational contact mechanics, formulation, tools and algorithms
- Frictional model for interfaces
- Multiscale approaches in contact mechanics