Application

Interested participants are kindly asked to send a CV and a Letter of Motivation to the Training School Office by March 30, 2012.

A maximum of 12 participants will be allowed to participate in the Training School.

Information on acceptance of application will be provided by April 13, 2012.

Participants will be asked for a moderate fee for covering costs for lunches and the get-together.

Local Organiser

Olivier ARNOULD
University of Montpellier 2
Laboratory of Mechanics and Civil Engineering (LMGC)
Montpellier
France

Tel: +33 4 67 14 96 50
Fax: +33 4 67 14 47 92
email: olivier.arnould@univ-montp2.fr

Training School Office

Martina PÖLL
Institute for Mechanics of Materials and Structures
Vienna University of Technology
Karlsplatz 13
1040 Vienna
Austria

Tel: +43 1 58801 20211
Fax: +43 1 58801 920211
email: Martina.Poell@tuwien.ac.at

Training School Venue

The training school will be held at the „Institut d'Electronique du Sud" (IES) of the University of Montpellier 2 (France). It is close from Montpellier center (old town) or railway station and easily and quickly accessible by public transportation (tramway, bus). Montpellier is accessible by high-speed train (TGV) from Paris/Paris-Charles de Gaulle Airport or by plane from the Montpellier International Airport which provides direct flights to some European destinations (Paris CDG/Orly, London Gatwick/Luton, Birmingham, Bruxelles, Francfort, Munich, ...).

Accommodation

Participants are asked to make their hotel reservations on their own. A list of recommendable hotels as well as contact details of university campus rooms are available at the Action's website (http://COST-FP0802.tuwien.ac.at).

Supporting Organisation

- COST - European Cooperation in the field of Scientific and Technical Research

About COST

COST – European Cooperation in the field of Scientific and Technical Research – is one of the longest-running European instruments supporting cooperation among scientists and researchers across Europe. COST is also the first and widest European intergovernmental network for coordination of nationally funded research activities.

More information on COST can be found at the COST website (http://www.cost.esf.org).

cost www.cost.esf.org

Action FP0802

Experimental and Computational Micro-Characterization Techniques in Wood Mechanics

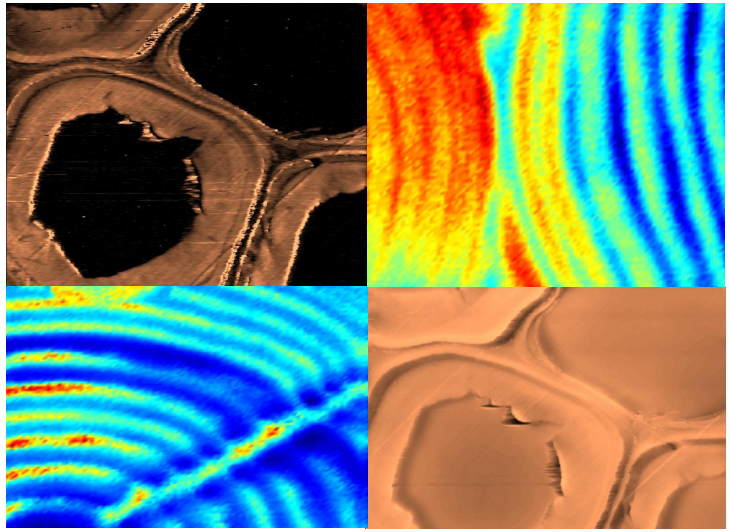
FPS

http://COST-FP0802.tuwien.ac.at

Training School

"Acoustic, ultrasonic and AFM characterization of wood mechanical properties"

May 21-25, 2012
Montpellier, France



COST is supported by the EU RTD Framework Programme

ESF provides the COST Office through an EC contract

EUROPEAN SCIENCE FOUNDATION

COST Action FP0802

The main objective of the COST Action FP0802 *"Experimental and Computational Characterisation Techniques in Wood Mechanics"* is to increase the understanding of the wood microstructure and micromechanics by exploring and evaluating emerging techniques in the fields of physics, chemistry, materials, and computer science in order to provide a strong basis for the development of innovative wood-based products in the future and for enhancing the use of the natural resource wood.

Objectives

The training school aims to provide young scientist with fundamental knowledge on acoustic and ultrasonic characterization of wood (visco)elasticity from the macroscopic scale to the microscopic one (AFM).

This include basic lectures on the differents techniques and their application to the case of wood with a focus on specific problems encountered then like sample preparation or required experimental conditions.

This will be followed by practical sessions on the different techniques. Students can try their own sample during this session. As specific sample preparation is required, it is asked to get in touch with the local organiser for the required sample dimensions and to send the sample before the training school.

The training school is mainly geared towards PhD students, but may also be of interest for researchers with a strong background in a single discipline in order to facilitate multi-disciplinary interaction and cooperation.

The training school shall also contribute to the strengthening of the links both between the early stage researchers and with experienced scientists involved in the COST Action.

Lecturers / Topics

Acoustic methods

Loïc BRANCHERIAU (CIRAD, Montpellier, France)
Iris BRÉMAUD (EMPA, Switzerland)

basic concepts on acoustics (sensors, signal processing, elastic waves in infinite and bounded media, measurement techniques and main physical effects, beam and plate theory, internal damping assessment) and application to wood

Ultrasonic wave propagation

Thomas BADER (Vienna Univ. of Technology, Austria)

wave propagation in homogeneous and heterogeneous media, wave generation and measurement techniques, anisotropic material and application to wood

Ultrasound reflectometry, microscopy and RUS

Thomas DELAUNAY (Univ. of Montpellier 2, France)
Didier LAUX (Univ. of Montpellier 2, France)
Emmanuel LE CLEZIO (Univ. of Montpellier 2, France)
Roberto LONGO (Univ. of Montpellier 2, France)

basic concept on ultrasound (vibration of parallelepipeds, reflectometry, microscopy), measurement techniques, resonnant ultrasonic spectroscopy and their applications to wood

Atomic Force Microscopy

Richard ARINERO (Univ. of Montpellier 2, France)
Olivier ARNOULD (Univ. of Montpellier 2, France)
Michel RAMONDA (Univ. of Montpellier 2, France)
M. Teresa CUBERES (Univ. of Castilla-La Mancha, Spain)

AFM basic principle and classical modes for topographic imaging, review of mechanical measurements possibilities and limitations in AFM; description of two specific mechanical measurement techniques: RC-AFM and UFM, and their applications to wood

Time Table