

Euromech Colloquium 569

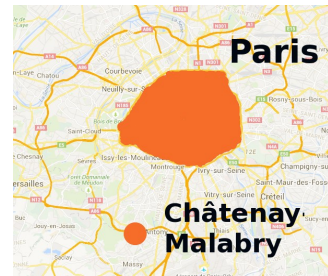
First announcement

Multiscale modeling of fibrous and textile materials

April 5-7 2016

CentraleSupélec

Châtenay-Malabry – France



Woven, non-woven, knitted, braided 2D or 3D textiles, cables, felts, mats, scaffolds, biological tissues... are fibrous materials or structures that are widely used in many applications. Their mechanics is complex and still not very well understood and modeled. For the two last decades, there has been a growing research activity in this domain, induced by recent techniques to characterize and to simulate meso/micro/nano-structures and deformation micro-mechanisms within such complex semi-discrete systems.

The proposed EUROMECH Colloquium will be a proper meeting point to establish a state of start and to exchange the different approaches aimed at tackling tough problems related to the mechanics of fibrous materials and structures at various scales, in order to meet the growing need for characterization, modeling and simulation of the behavior of this kind of structures.

The relative motions allowed between elementary components (fibers, fiber bundles...), the complex arrangements of fibers or filaments according to different hierarchical levels, the influence of contact-friction interactions, rearrangements and environmental conditions on the macroscopic behavior are some of the key problematic features characterizing these materials and structures in the scope of the conference.

Thus, the conference will be dedicated to approaches dealing with:

- the identification and geometrical description of the meso/micro/nanostructures of fibrous media;
- the identification and characterization of the mechanical properties of fibers fiber-fiber contacts, and fiber assemblies at various scales;
- the modeling and the simulation of the mechanics of fibrous media at their various constitutive scales.

The conference will cover applications such as papers and boards, fibrous insulating materials, woven and knitted fabrics used as fibrous reinforcements in composites, textile ropes, smart fibrous materials, fibrous biomaterials, biological fibrous tissues.

Chair: Stepan Lomov

KU Leuven, Belgium

Damien Durville

CentraleSupélec, France

Scientific Committee

- Lars Beex, Luxembourg
- Philippe Boisse, France
- Valter Carvelli, Italy
- Pierre Dumont, France
- Stephen Hallett, United Kingdom
- Philip Harrison, United Kingdom
- Per Isaksson, Sweden
- Artem Kulachenko, Sweden
- Yordan Kyosev, Germany
- Steven Le Corre, France
- Javier Llorca, Spain
- Patrick Onck, The Netherlands
- Catalin Picu, USA
- Prasad Potluri, United Kingdom
- David Rodney, France
- François Willot, France

Local organizing Committee

- Damien Durville, France
- Jean-François Ganghoffer, France
- Laurent Orgéas, France

<http://569.euromech.org>