July 2009

Dear Colleague,

the fourth European Conference on Computational Mechanics (IV ECCM 2010) will be held in Paris next year, May 16-21 2010. Information and details are available at the conference web site http://www.eccm2010.org/.

A Mini Symposium (MS) has been proposed by Professors Roberto Fedele, Filippo Bertolino, François Hild and Julien Réthoré. The title of the MS (Reference number 36) is: "**Identification of material models by non-trivial tests and innovative measurement techniques at different observation scales** ". In what follows a description of the MS is outlined.

On the basis of your expertise on this subject, the organizers will be very glad if you could submit a contribution to the MiniSymposium.

Abstracts can be submitted via the congress website (open between Sept. 30 and Nov. 20, 2009).

A few important points to recall. No participant will be allowed to present more than one paper during the conference (with the exception of plenary and semi-plenary lectures). Only papers presented by paying registered participants will be included in the final Programme of ECCM 2010.

The MS Organizers

Roberto Fedele
Filippo Bertolino
François Hild
Julien Réthoré

ECCM MiniSymposium Ref. number 36

Title: **Identification of material models by non-trivial tests and innovative measurement techniques at different observation scales**

Organizers:
Fedele Roberto, Assistant Professor, Politecnico di Milano, fedele@stru.polimi.it
Bertolino Filippo, Full Professor, University of Cagliari, bertolin@iris.unica.it
Hild François, Full Professor, LMT Ens Cachan, hild@lmt.ens-cachan.fr
Julien Réthoré, Assistant Professor, Insa Lyon/ CNRS, julien.rethore@insa-lyon.fr

Description

Advanced models for material mechanics contain numerous parameters, many of which are difficult to estimate or even do not possess a clear physical meaning. Therefore, these parameters have to be identified simultaneously on the basis of experimental data, through identification techniques. On the other hand, recent advances in experimental mechanics allow nowadays to design innovative, non-conventional tests (both in the laboratory or in situ), providing high accuracy data at different observation scales. Inverse methodologies can thus be developed by combining synergistically the experimental information provided by innovative experiments, computer simulations and specific identification procedures. The final purpose is the improve the calibration/validation process of predictive models for material and structural mechanics, in view of their effective application to industrial problems. The minisymposium will include the following topics: (i) innovative tests and non-conventional measurement techniques (2D and 3D digital image correlation, interferometry, etc.); (ii) analyses by advanced numerical models, including first and second-order sensitivity computations; (iii) robust identification procedures, especially conceived for full-field measurements.