
The aim of this international conference is to provide an overview of some recent results and open problems related to the study of mathematical models and analytical problems for special materials, such as shape memory alloys, elasto-plastic and viscoelastic materials, systems exhibiting more than one phase or configuration, and mechanical structures undergoing irreversible changes.

Invited speakers

A. Berti (Brescia) V. Berti (Bologna), A-L. Bessoud (IMATI-CNR), I. Bochicchio (Salerno), M. Cocou (Marseille), M. Coti Zelati (Milano), F. Di Plinio (Indiana), M. Eleuteri (Trento), M. Frémond (Paris), S. Frigeri (IMATI-CNR), C. Gal (Missouri), S. Gatti (Modena), A. Giacomini (Brescia), D. Hoemberg (Berlin), B. Miara (Noisy-le-Grand), G. Mola (Milano), J.E. Muñoz Rivera (Petrópolis), A. Musesti (Brescia), R. Quintanilla (Barcelona), E. Rocca (Milano), R. Rossi (Brescia), U. Stefanelli (IMATI-CNR), B. Straughan (Durham), S. Zelik (Surrey).

Sponsors

- ◇ Dipartimento di Matematica, Università degli Studi di Brescia
- ◇ Facoltà di Ingegneria, Università degli Studi di Brescia
- ◇ Fondo per le attività a carattere internazionale, Università degli Studi di Brescia
- ◇ INDAM-GNFM
- ◇ Seminario Matematico di Brescia
- ◇ Università di Bologna

Scientific Committee

Pierluigi Colli (Pavia)
Mauro Fabrizio (Bologna)
Gianni Gilardi (Pavia)
Claudio Giorgi (Brescia)
Maurizio Grasselli (Milano)

Organizing Committee

Giovanna Bonfanti (Brescia)
Maria Grazia Naso (Brescia)
Antonio Segatti (Pavia)

Program

Thursday, July 9, 2009 — afternoon

14.55–15.00 *opening*

15.00–15.40 Dietmar HOEMBERG (Berlin): *Direct and inverse problems related to phase transitions and distortion in modern multi-phase steels*

15.45–16.05 Gianluca MOLA (Milano): *Identification of an unknown term in a convolution integro-differential equation in a Banach space*

16.10–16.35 *coffee break*

16.35–17.15 Brian STRAUGHAN (Durham): *Convection in bidispersive porous media*

17.20–17.40 Michele COTI ZELATI (Milano): *Steady states of the hinged extensible beam with external load*

17.45–18.05 Francesco DI PLINIO (Indiana): *Regularization properties and asymptotics of the Coleman-Gurtin model*

18.10–18.40 Ciprian GAL (Missouri): *Mathematical study of two-phase flows of viscous and incompressible fluids*

20.00 *dinner @ I Silvani*

Friday, July 10, 2009 — morning

9.00– 9.40 Marius COCOU (Marseille): *A class of dynamic contact interactions between viscoelastic bodies*

9.45–10.05 Sergio FRIGERI (IMATI-CNR): *A 3D model for martensitic reorientation in shape memory alloys*

10.10–10.30 Valeria BERTI (Bologna): *A three-dimensional model for shape memory alloys*

10.35–11.00 *coffee break*

11.00–11.40 Ramon QUINTANILLA (Barcelona): *On the uniqueness of solutions in thermo-elasticity with internal structure*

11.45–12.05 Alessia BERTI (Brescia): *On a contact problem for viscoelastic beams*

12.10–12.30 Alessandro MUESTI (Brescia): *Two-scale homogenization in strain-gradient plasticity*

12.35–12.55 Elisabetta ROCCA (Milano): *A model of phase-field for two-phase compressible fluids*

13.00 *lunch @ I Silvani*

Friday, July 10, 2009 — afternoon

- 15.00–15.40 Sergey ZELIK (Surrey): *Quasi-linear strongly damped wave equations: well-posedness, dissipativity and attractors*
- 15.45–16.05 Stefania GATTI (Modena): *A doubly nonlinear problem with singular potential in phase-separation*
- 16.10–16.35 *coffee break*
- 16.35–17.15 Jaime E. MUÑOZ RIVERA (Petrópolis): *Optimality on polynomial decay of semigroups in elasticity*
- 17.20–17.40 Ivana BOCHICCHIO (Salerno): *Longterm damped dynamics of the extensible suspension bridge*
- 17.45–18.15 Ulisse STEFANELLI (IMATI-CNR): *The Souza-Auricchio model goes thermo*
- 20.00 *dinner @ I Silvani*

Saturday, July 11, 2009 — morning

- 9.00– 9.40 Bernadette MIARA (Noisy-le-Grand): *Exact controllability of elastic and piezoelectric shells*
- 9.45–10.05 Anne-Laure BESSOUD (IMATI-CNR): *A model of multi-materials whose thin interfaces undergo solid/solid phase transitions*
- 10.10–10.30 Alessandro GIACOMINI (Brescia): *Non-interpenetration of matter for SBV-deformations in fracture mechanics*
- 10.35–11.00 *coffee break*
- 11.00–11.20 Michela ELEUTERI (Trento): *The electrorheological fluids: modelling and recent mathematical results*
- 11.25–11.45 Riccarda ROSSI (Brescia): *Analysis of a model for adhesive contact with thermal effects*
- 11.50–12.30 Michel FRÉMOND (Paris): *Large deformations in mechanics*
- 12.35 *end of the workshop*
- 13.00 *lunch, if you like*

Participants and their email addresses

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