

# INdAM Workshop on vector-valued mappings and systems of PDE's

Roma, May 17-21 2010

## Organizers:

Paolo Marcellini, Università di Firenze

Carlo Sbordone, Università di Napoli Federico II

The workshop will take place in Roma (INdAM, Istituto Nazionale di Alta Matematica, Città Universitaria P.le A. Moro n. 5, Roma, Italy) from the 17th to the 21st of May 2010.

## Program of Conferences

### Monday, May 17

15.15 Opening addresses

15.30 – 16.10 Irene Fonseca, *Variational methods in image processing*

16.10 – 16.50 Frank Duzaar, *Regularity for parabolic systems with degenerate diffusion*

16.50 – 17.10 Coffee break

17.10 – 17.50 Kari Astala, *Sharp bounds for quasiconformal mappings in the critical  $W^{1,p}$ -space*

17.50 – 18.30 Matteo Focardi, *Homogenization of fractional obstacle problems*

### Tuesday, May 18

09.30 – 10.10 Luigi Orsina, *Quasilinear and semilinear singular elliptic equations and systems*

10.10 – 10.50 Tommaso Leonori, *Gradient bounds for elliptic problems singular at the boundary and application to a stochastic control problem with state constraint*

10.50 – 11.10 Coffee break

11.10 – 11.50 Lucio Boccardo, *Dirichlet problems with singular convection terms and applications to some systems*

11.50 – 12.30 Micol Amar, *Homogenization of chessboard structures*

15.30 – 16.10 Bernard Dacorogna, *The pullback equation and Darboux theorem*

16.10 – 16.50 Elvira Mascolo, *Polyconvex and nonpolyconvex functionals*

16.50 – 17.10 Coffee break

17.10 – 17.50 Olivier Kneuss, *On the equation  $\det Du = f$  without sign hypothesis*

17.50 – 18.30 Carlo Nitsch, *Groundwater flow in a fissurised porous media*

## Wednesday, May 19

09.30 – 10.10 Michael Bildhauer, *On local generalized minimizers and local stress tensors for variational problems with linear growth*

10.10 – 10.50 Antonia Passarelli di Napoli, *Higher differentiability and regularity for minimizers of multiple integrals with nonstandard growth conditions*

10.50 – 11.10 Coffee break

11.10 – 11.50 Carlo Mariconda, *A Rado-Haar type result for minima in Sobolev spaces: part I*

11.50 – 12.30 Giulia Treu, *A Rado-Haar type result for minima in Sobolev spaces: part II - applications to regularity*

## Thursday, May 20

09.30 – 10.10 Arrigo Cellina, *tba*

10.10 – 10.50 Emanuele Paolini, *On the  $n$ -dimensional Dirichlet problem for isometric maps*

10.50 – 11.10 Coffee break

11.10 – 11.50 Aldo Pratelli, *On the properties of the planar sets with fixed lengths of the bisecting chords*

11.50 – 12.30 Francesco Maggi, *Geometric properties of equilibrium shapes of small crystals*

15.30 – 16.10 Gioconda Moscariello, *Bisobolev maps*

16.10 – 16.50 Luigi Greco, *A version of Gehring lemma in Orlicz spaces*

16.50 – 17.10 Coffee break

17.10 – 17.50 Giovanni Cupini, *Regularity of minimizers under sharp anisotropic general growth conditions*

17.50 – 18.30 Flavia Giannetti, *Some regularity results of solutions of degenerate  $A$ -harmonic equations*

## Friday, May 21

09.30 – 10.10 Tadeusz Iwaniec,  *$p$ -Harmonic energy of deformations of punctured balls*

10.10 – 10.50 Stanislav Hencl, *Jacobians of Sobolev homeomorphisms*

10.50 – 11.10 Coffee break

11.10 – 11.50 Anna Verde, *Regularity results for functionals with general growth*

11.50 – 12.30 Giuseppe Mingione, *tba*