

# Geometric Analysis

November 1-30, 2003

The aims of this intensive research month was to bring together scientists of different universities and encourage informal exchanges of ideas. The scientific focus was on Geometric Analysis in general and, in particular, on geometric variational problems.

Informal activities were organized by the participants themselves and about 25 lectures were held. More than 60 people participated to the activities. The list of the seminar talks includes:

Giovanni BELLETTINI (Università di Roma Tor Vergata) *Some results on anisotropic mean curvature flow*

Fabrice BETHUEL (Université Paris 7 Denis-Diderot Jussieu) *Convergence of the complex parabolic Ginzburg-Landau equation to motion by mean curvature*

Camillo DE LELLIS (Eidgenössische Technische Hochschule Zürich) *Sharp rigidity estimates for nearly umbilical surfaces*

Olivier DRUET (Ecole Normale Supérieure De Lyon) *From one bubble to several bubbles: the effect of the geometry and the dimension*

Adriana GARRONI (Università di Roma La Sapienza) *Variational formulations for the dislocations on crystals*

Qing HAN (University of Notre Dame,-Indiana) *Local Isometric Embedding of Surfaces in  $\mathbb{R}^3$*

Emmanuel HEBEY (Université de Cergy-Pontoise) *Bubbles over bubbles, elliptic equations, and blow-up theory*

Frédéric HELEIN (École Normale Supérieure De Cachan) *Hamiltonian formalisms with several variables*

Frédéric HELEIN (École Normale Supérieure De Cachan) *Integrable systems in differential geometry*

David HOLGMAN (University of San Francisco), *Singular perturbation of the first eigenfunction*

Min-Chun HONG (University of New England, Armidale) *Partial regularity for liquid crystal configurations*

Radu IGNAT (École Normale Supérieure de Paris) *About lifting of functions with values into the circle  $S^1$*

Ernest KUWERT (Freiburg Universität) *Removability of isolated singularities of Willmore surfaces*

Domenico MUCCI (Università di Parma) *Fractures and vector valued maps*

Frank PACARD (Université Paris XII Val De Marne) *Concentration along submanifolds phenomena for some nonlinear problems*

Adriano PISANTE (Università di Roma La Sapienza) *A variational problem with lack of compactness for  $H^{1/2}(S^1; S^1)$  maps of prescribed degree*

Maria Alessandra RAGUSA (Università di Catania) *Some variational and nonvariational problems related to linear partial differential equations*

Etienne SANDIER (Université Paris XII Val De Marne) *Results for the time dependent Ginzburg-Landau equations with magnetic field*

Reiner SCHAEZLE (Bonn Universität) *Quadratic tilt-excess decay and strong maximum principle for varifolds*

Carlo SINISTRARI (Università di Roma Tor Vergata) *Mean curvature flow after singularities by a surgery procedure*

Didier SMETS (Université Paris 7 Denis-Diderot Jussieu) *Some properties of the vorticity for a nonlinear Schroedinger equation*

Sergio SOLIMINI (Politecnico di Bari) *Concentration and nonlinear PDEs*

Pawel STRZELECKI (Warsaw University) *On regularity and weak convergence of biharmonic maps into spheres*

Michael STRUWE (Eidgenössische Technische Hochschule Zürich) *Recent progress on Nirenberg's problem*

Ali TAHERI (University of Warwick) *Topology and quasiconvexity*

Gabriella TARANTELLA (Università di Roma Tor Vergata) *Liouville-type equations in gauge field theory*

Yoshihiro TONEGAWA (Hokkaido University) *On the stable critical points for a two-phase field equation*

Peter TOPPING (University of Warwick) *Ricci flow overview*

Neil TRUDINGER (Australian National University, Canberra) *Analytic problems in affine geometry*

Nina URALTSEVA (St. Petersburg University) *Properties of the free boundary in the parabolic obstacle problem*

Xiaoping YANG (Nanjing University) *Nonholonomic connections and mean curvatures in sub-Riemannian manifolds*