



«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE
TO PAY A PERMANENT TRIBUTE TO GALILEO GALILEI, FOUNDER OF MODERN SCIENCE
AND TO ENRICO FERMI, THE "ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES



INTERNATIONAL SCHOOL OF MATHEMATICS «GUIDO STAMPACCHIA»

51st Workshop VARIATIONAL ANALYSIS AND APPLICATIONS

*In memory of Ennio De Giorgi and Guido Stampacchia
The Award of the Third Gold Medal "Guido Stampacchia"*

ERICE-SICILY: 9 – 17 MAY 2009

Sponsored by the: • Italian Ministry of University and Research • Sicilian Regional Government
• University of Catania • University of Pisa • University of Reggio Calabria
• Department of Mathematics of the University of Messina • Istituto Nazionale di Alta Matematica (GNAMPA)
• Scuola Normale Superiore di Pisa • Accademia Nazionale dei Lincei

PROGRAMME AND LECTURERS

*Calculus of Variations and Variational Inequalities
Elliptic and Parabolic PDE
Equilibrium Problems on Networks
Generalized Complementarity Problems
Hamiltonian Systems
Infinite Dimensional Duality Theory
Minimax Problems
Minimizers of Free Discontinuity Problems
Multifunctions, Differential Inclusions
Numerical Methods in Optimization and PDE
Optimal Control, Nonconvex Optimization
Optimization Problems in Mass Transportation Theory
Quasidifferential Calculus and Subgradients
Set Convergence*

• G. BUTTAZZO, University of Pisa, IT
• X. CABRÉ, Universitat Politècnica de Catalunya, Barcelona, ES
• V. CASELLES, Universitat Pompeu Fabra, Barcelona, ES
• G. DAL MASO, SISSA, Trieste, IT
• P. DANIELE, University of Catania, IT
• C. DE LELLIS, University of Zurich, CH
• V.F. DEMYANOV, St. Petersburg State University, St. Petersburg, RU
• A. FIGALLI, Ecole Polytechnique, Palaiseau, FR

• N. FUSCO, University of Naples, IT
• A. IOFFE, Technion Haifa, IL
• A. MELLET, University of Maryland, College Park, MD, US
• R. MONNEAU, CERMICS – ENPC, Marne la Vallée, FR
• B.S. MORDUKHOVICH, Wayne State University, Detroit, MI, US
• M.K.V. MURTHY, University of Pisa, IT
• A. NAGURNEY, University of Massachusetts, Amherst, MA, US
• M.Z. NASHED, University of Central Florida, Orlando, FL, US
• Y. NESTEROV, Université Catholique de Louvain, BE
• P.M. PARDALOS, University of Florida, Gainesville, FL, US
• L. QI, University of Hong Kong, Hong Kong, HK
• A. QUARTERONI, Politecnico di Milano, IT
• B. RICCERI, University of Catania, IT
• R.T. ROCKAFELLAR, University of Washington, Seattle, US
• S. SALSA, Politecnico Milano, IT
• C. SBORDONE, University of Naples, IT
• S. SERFATY, New York University, New York, NY, US
• P. SOUGANIDIS, University of Texas, Austin, TX, US
• S. TERRACINI, University of Milan Bicocca, Milan, IT
• M. THÉRA, Université de Limoges, FR
• N.S. TRUDINGER, Australian National University, Canberra, AU
• J.-C. YAO, National Sun Yat-sen University, Kaohsiung, CN
• C. ZALINESCU, University "Al. I. Cuza", Iasi, RO

PURPOSE OF THE WORKSHOP

The Workshop aims at presenting the state-of-the-art and current research directions in Variational Analysis and its applications. Variational Analysis encompasses a large area of modern Mathematics, including the classical Calculus of Variations, the Theories of Perturbation and of Approximation, Generalized Differentiability, Set Convergence, Variational Inequalities and Partial Differential Equations.

In many of these fields, Ennio De Giorgi gave outstanding contributions. Moreover, techniques and research directions indicated by him had and still have an enormous impact. He worked both in theory and applications of Variational Analysis, covering a wide class of problems (regularity of solutions to partial differential equations, minimal surfaces, homogenization, measure theory, foundations of Mathematics, generalized limits). Ennio De Giorgi had a great friendship with Guido Stampacchia. The mutual scientific discussions led to the solution of fundamental problems in Mathematical Analysis.

In particular, Guido Stampacchia was the founder of Variational Inequalities in the 60's of the last century and the subsequent years have witnessed an outstanding attention to this theory, which covers applications of extreme interest related to Mathematical Physics and, more recently, to Engineering, Statistics, Economics and Financial Networks. Variational Inequalities have stimulated side theories, as generalized Complementarity Problems and Vector Variational Inequalities. Furthermore, several classical and new theories, such as those of Evolutionary Projected Dynamical Systems and Infinite Dimensional Duality, as well as research in discretized computational methods, have received a decisive impulse in order to offer effective solutions to until now unsolved problems. The workshop aims to offer a review of research themes, methods and open problems together with outlines of the new research trends in all the above topics.

APPLICATIONS

Persons wishing to attend the Workshop should apply by e-mail to the Co-Director of the Workshop:

• Professor Antonino MAUGERI
Department of Mathematics and Computer Science
University of Catania, Viale A. Doria, 6 – 95125 CATANIA
Tel + 39.095.738 3059 – Fax + 39.095.330094 – e-mail: maugeri@dmi.unict.it

They should specify:

- i) date and place of birth, together with current nationality;
- ii) affiliation;
- iii) address, e-mail address.

Closing Date for Applications: 15 April, 2009

POETIC TOUCH

According to legend, Erice, son of Venus and Neptune, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The founder of modern history — i.e. the recording of events in a methodic and chronological sequence as they really happened without reference to mythical causes — the great Thucydides (~500 B.C.), writing about events connected with the conquest of Troy (1183 B.C.) said: «After the fall of Troy some Trojans on their escape from the Achaei arrived in Sicily by boat and as they settled near the border with the Sicilians all together they were named Elymi: their towns were Segesta and Erice.» This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchise, by his son Enea, on the coast below Erice. Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others have celebrated this magnificent spot in Sicily in their poems. During seven centuries (XIII-XIX) the town of Erice was under the leadership of a local oligarchy, whose wisdom assured a long period of cultural development and economic prosperity which in turn gave rise to the many churches, monasteries and private palaces which you see today.

In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture. Other masterpieces of ancient civilization are to be found in the neighbourhood: at Motya (Phoenician), Segesta (Elymian), and Selinunte (Greek). On the Aegadian Islands — theatre of the decisive naval battle of the first Punic War (264-241 B.C.) — suggestive neolithic and paleolithic vestiges are still visible: the grottoes of Favignana, the carvings and murals of Levanzo.

Splendid beaches are to be found at San Vito Lo Capo, Scopello, and Cornino, and a wild and rocky coast around Monte Cofano: all at less than one hour's drive from Erice.

More information about the «Ettore Majorana» Foundation and Centre for Scientific Culture can be found on the WWW at the following address:
<http://www.ccsem.infn.it>

PLEASE NOTE

Participants must arrive on May 9, not later than 7 pm.