

INTERNATIONAL SCHOOL OF MATHEMATICS «G. STAMPACCHIA»

44th Workshop: VARIATIONAL ANALYSIS AND PARTIAL DIFFERENTIAL EQUATIONS

*In memory of Sergio Campanato
The Award of the Second Gold Medal “G. Stampacchia”*

ERICE-SICILY: 5-14 JULY 2006

Sponsored by the: • Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government • University of Catania
• University of Pisa • Mediterranean University of Reggio Calabria • Department of Mathematics of the University of Messina
• Istituto Nazionale di Alta Matematica (GNAMPA)
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Topics and Lecturers

Discontinuous Elliptic and Parabolic PDE and PDS

Dynamical Systems

Evolutionary Equilibrium Problems on Networks

Existence and Regularity of Weak Solutions to Nonlinear PDE and PDS

Generalized Complementarity Problems

Infinite Dimensional Lagrange Theory, Separation and Duality

Minimax Problems

Multifunctions, Differential Inclusions

Nonvariational PDE and PDS

Optimal Control, Nonconvex Optimization

Quasidifferential Calculus and Subgradients

Stochastic Variational Analysis

Variational Geometry

Vector Variational Inequalities

- S. ADLY, University of Limoges, F
- H. ATTOUCH, University of Montpellier II, F
- P.M. CANNARSA, University of Rome “Tor Vergata”, I
- D. CARLSON, Mathematical Reviews, Ann Arbor, USA
- A. CELLINA, University of Milan – Bicocca, I
- M.G. COJOCARU, University of Guelph, CDN
- P. COLLI, University of Pavia, I
- P. D’ANCONA, University of Rome “La Sapienza”, I
- P. DANIELE, University of Catania, I
- G. DA PRATO, Scuola Normale Superiore, Pisa, I
- V.F. DEMYANOV, S. Petersburg State University, RU
- M. FRASCA, University of Catania, I
- M. GIAQUINTA, Scuola Normale Superiore, Pisa, I
- S. GIUFFRÈ, University of Reggio Calabria, I
- C. GUTIERREZ, Temple University, Philadelphia, USA
- G. IDONE, University of Reggio Calabria, I
- A.D. IOFFE, Technion Haifa, IL
- G. ISAC, Royal Military College of Canada, CDN

- A.A. KHAN, University of Wisconsin, USA
- S. KOIKE, Saitama University, JP
- N.V. KRYLOV, University of Minnesota, USA
- H.J. KUO, Chung-Hsing University, TW
- D. LABUTIN, University of California, USA
- A. MARINO, University of Pisa, I
- M. MARINO, University of Catania, I
- G. MASTROENI, University of Pisa, I
- R. McCANN, University of Toronto, CDN
- S.K. MYSHKOV, S. Petersburg State University, RU
- B. MORDUKHOVICH, Wayne State University, USA
- A. NAGURNEY, University of Massachusetts, USA
- J. NAUMANN, Humboldt University, Berlin, D
- A.I. NAZAROV, S. Petersburg State University, RU
- F. NICOLSI, University of Catania, I
- D.K. PALAGACHEV, Technical University of Bari, I
- M. PAPPALARDO, University of Pisa, I
- P.M. PARDALOS, University of Florida, USA
- L. QI, Hong Kong Polytechnic University, HK
- T. RAPCSÁK, Hungarian Academy of Sciences, H
- B. RICCIERI, University of Catania, I
- S.M. ROBINSON, University of Wisconsin, USA
- T.R. ROCKAFELLAR, University of Washington, USA
- A. RUBINOV, University of Ballarat, AUS
- M. SAFONOV, University of Minnesota, USA
- L. SCRIMALI, Université Catholique de Louvain, B
- Y.D. SERGEYEV, University of Calabria, I
- L.G. SOFTOVA, University of Potenza, I
- A. TARSIA, University of Pisa, I
- M. THERA, University of Limoges, F
- C. VITANZA, University of Messina, I
- X.Q. YANG, Hong Kong Polytechnic University, HK
- C. ZALINESCU, University “Al. I. Cuza”, RO

PURPOSE OF THE WORKSHOP

The workshop aims at presenting state-of-the-art and current research directions in variational analysis and partial differential equations and systems. Variational analysis encompasses a large area of modern mathematics, including the classic calculus of variations, the theories of perturbation, approximation, sungradient, subderivatives, set convergence and variational inequalities. Originating with the Signorini problem, about 4 decades ago, variational inequalities have undergone great development and influence both in the progress of variational analysis, and in applications to mathematical physics and, more recently, to engineering, statistics, economics, financial networks and generalized complementarity problems. 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 hitherto unsolved problems.

The contribution of Sergio Campanato to the regularity theory for nonlinear variational and nonvariational partial differential equations and systems, his outstanding and general regularization method, the theory of nearness for operators, his strong attempt to establish a unified theory from which it is possible to derive the solution of many of the most important and unsolved problems, his challenge for shining and profound mathematics represent a gift for all mathematicians and a real improvement of our knowledge.

The workshop aims to offer a review of research themes, methods and open problems together with outlines of the new research trends in PDE and PDS.

APPLICATIONS

Persons wishing to attend the workshop should apply in writing to:

- 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@dmf.unict.it

They should specify:

- Date and place of birth, together with present nationality;
- Affiliation;
- Address, e-mail address.

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 Sicanians 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.), Pylbios (~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 July 5, not later than 7 p.m.