



«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»

63rd Workshop: *VARIATIONAL ANALYSIS AND APPLICATIONS*

In memory of Guido Stampacchia
The Award of the Fifth Gold Medal "G. Stampacchia"

ERICE-SICILY: 28 AUGUST – 5 SEPTEMBER 2015

Sponsored by the: • Italian Ministry of Education, University, and Research • Sicilian Regional Government
• University of Milano-Bicocca (Dip. Matematica e Applicazioni) • University of Catania • Mediterranean University of Reggio Calabria
• University of Messina • Università di Napoli "Federico II" • Istituto Nazionale di Alta Matematica (GNAMPA) • University of Zürich

PROGRAMME AND LECTURERS

Evolutionary Projected Dynamical Systems
Infinite Dimensional Duality
Minimax Problems
Existence of Solutions for Jacobian and Hessian Equations
Optimal Control
Differential Inclusions
Dual Conditions for Nonconvex Functions
Moving Boundary Variational Problems
Inverse Variational Inequalities
Degenerate Transmission Problems
Obstacle Problems with Measurable Coefficients
Second Order Optimality Conditions
Infima over Sub-Level Sets
Relaxation Methods in Hilbert Spaces
New Energy Inversion in Saddle Point Problems
Stochastic Variational Inequalities

- S. ADLY, University of Limoges, FR
- S.S. AL-HOMIDAN, King Fahd University of Petroleum and Minerals, Dhahran, SA
- A. BARBAGALLO, University of Naples, IT
- G. BONANNO, University of Messina, IT
- E.H. BONNEL, Université de la Nouvelle-Calédonie at Nouméa, NCL
- R. BOT, University of Vienna, AT
- R. BURACHIK, University of South Australia, Adelaide, SA, AU
- S. CARL, Martin-Luther Universität Halle-Wittenberg, DE
- P. DANIELE, University of Catania, IT
- C. DE LELLIS, University of Zurich, CH
- G. DI FAZIO, University of Catania, IT
- A. DONTCHEV, University of Michigan, Ann Arbor, MI, US
- D. DRUSVYATSKIY, University of Washington, Seattle, WA, US
- R. ELSTER, Martin-Luther Universität Halle-Wittenberg, DE
- E. ERNST, University of Aix-Marseille, FR
- A. FIGALLI, University of Texas at Austin, TX, US
- H. FRANKOWSKA, Université Pierre et Marie Curie, Paris 6, FR
- S. GIUFFRÉ, Mediterranean University of Reggio Calabria, IT

- R. HENRION, WIAS, Berlin, DE
- J.-B. HIRIART-URRUTY, University of Toulouse, FR
- A. IOFFE, Technion Israel Institute of Technology, Haifa, IL
- A. JOFRE, University of Chile, Santiago de Chile, CL
- A.A. KHAN, Rochester Institute of Technology, Rochester, NY, US
- A. KRUGER, Federation University Australia, Mount Helen, Vic, AU
- M.A. LÓPEZ CERDÁ, University of Alicante, ES
- S. MARANO, University of Catania, IT
- J.E. MARTINEZ LEGAZ, Universidad Autonoma de Barcelona, ES
- B. MORDUKHOVICH, Wayne State University, Detroit, MI, US
- Z. NASHED, University of Central Florida, Orlando, FL, US
- J. NAUMANN, Humboldt Universität zu Berlin, DE
- A. NEVES, Imperial College London, UK
- N. OSMOLOVSKII, University of Radom, PL
- J. OUTRATA, Institute of Information Theory and Automation, Prague, CZ
- D. PALAGACHEV, Politecnico di Bari, IT
- P. PARDALOS, University of Florida, Gainesville, FL, US
- T. PENNANEN, King's College London, UK
- R. PINI, University of Milano-Bicocca, IT
- A. PRATELLI, Universität Erlangen-Nürnberg, DE
- A. QUARTERONI, Ecole Polytechnique Fédérale de Lausanne, CH
- F. RACITI, University of Catania, IT
- V. RADULESCU, University of Craiova, RO
- M.A. RAGUSA, University of Catania, IT
- B. RICCERI, University of Catania, IT
- S. ROBINSON, University of Wisconsin-Madison, Madison, WI, US
- T. ROCKAFELLAR, University of Washington, Seattle, WA, US
- J. ROYSET, Naval Postgraduate School, Monterey, CA, US
- L. SCRIMALI, University of Catania, IT
- L. SZÉKELYHIDI, Universität Leipzig, DE
- C. TAMMER, Martin-Luther Universität Halle-Wittenberg, DE
- M. THÉRA, University of Limoges, FR
- Van Ngai HUYNH, University of Quy Nhon, VN
- C. VITANZA, University of Messina, IT
- W.X. SHAWN, University of British Columbia, CND
- R. WETS, University of California, Davis, CA, US

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, subgradient, subderivatives, set convergence and variational inequalities. Originating with the Signorini problem, about 5 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.

In particular, several classical and new theories have received a strong impulse for effective solutions to until-now unsolved problems. These theories include: infinite dimensional duality and zero duality gap, minimax problems, variational principles and fixed points problems, Jacobian and Hessian equations, degenerate problems, variational problems with measurable coefficients, inverse variational problems, second order optimality conditions, infima over sub-level sets, stochastic variational inequalities and optimization problems, variational and differential inclusions. The workshop aims at offering a review of the results achieved in the above research themes, specifying the used methods and pointing out the open problems together with outlines of the new research trends in the principal topics of variational analysis and applications. The sessions of September 3-4 will be dedicated to Professor Antonino Maugeri in the occasion of his 70th birthday.

The proceedings of the special session dedicated to Professor Maugeri, but extended also to all the participants in the international workshop, will be published in a special issue of *Journal of Convex Analysis*, edited by P. Daniele, F. Giannessi and M. Théra. The deadline for submitting the contribution is November 1, 2015.

During the opening ceremony of the International Workshop, a Gold Medal in honour of Guido Stampacchia will be assigned for the fifth time, after an international competition, to a young mathematician, whose age be not greater than 35 years at the date of December 31st 2015, for his scientific contribution in the field of Variational Analysis.

APPLICATIONS

Persons wishing to attend the workshop and to deliver a short communication should apply by using the website varana.org (Registration & Abstract Submission) or by emailing to: info@varana.org

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 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 Anchises, by his son Aeneas, 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.csem.infn.it>

PLEASE NOTE: Participants must arrive on 28 August, not later than 6 p.m.