

Invited lectures

Antonio Ambrosetti (SISSA, Trieste, Italy)

"Critical Point theory and nonlinear problems"

We will survey some old and new theoretical achievements in Critical point theory and their motivations. Recent applications to Nonlinear elliptic partial differential equations will also be discussed.

François Loeser (Ecole Normale Supérieure, Paris, France)

"From counting points to motivic integration: the geometry behind computing integrals"

In the last twenty years, integration over non archimedean valued fields have shown to have some striking geometric consequences. We intend to survey some of these and also to give the flavor of some more recent developments.

Alberto Bressan (Penn State University, USA)

"On the optimal harvesting of marine resources"

We consider a variational problem of optimal fish harvesting, in a one- or two-dimensional domain. The mathematical model is described by a nonlinear elliptic equation, where the controls act on the source terms. In general, optimal controls can be singular, i.e. they are not functions but Radon measures. Existence results, optimality conditions, connections with the theory of impulsive control, and open problems will be discussed.

Claus Michael Ringel (University of Bielefeld, Germany)

"Tilting Theory - the Art of Losing Modules"

Tilting theory is a handy tool in order to compare different module categories (or, more generally, abelian categories which arise in algebra and geometry): the categories are chopped into parts, some parts are suitably rearranged, whereas other parts may be lost. Actually, in many situations one is happy about the loss and usually does not try to recover the missing parts. Some examples will be presented, mainly categories of representations of finite-dimensional (associative) algebras.

Wolfgang Johann Runggaldier (University of Padua, Italy)

"Contagious default: application of methods of Statistical Mechanics in Finance"

Default of a firm is in general contagious (infectious). The study of contagion is therefore important for an institution holding a large credit portfolio. Interacting particle methods turn out to be a convenient tool to deal with these phenomena. This allows also to view a credit crisis as a microeconomic phenomenon driven by endogenous financial indicators.

Organizing Committee

Giancarlo Benettin

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Michela Redivo Zaglia

Luigi Salce

Daniela Friscina (Secretary)



UNIVERSITÀ
DEGLI STUDI
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PURA ED APPLICATA

SCIENTIFIC MATHEMATICAL MEETING 2007

March 16, 2007

Celebrating the 20th Anniversary of the
Department of Pure and Applied Mathematics



The scientific meeting is being organized on the occasion of 20th Anniversary of the Department of Pure and Applied Mathematics of the University of Padua and will take place in the new departmental building called "Torre Archimede".

The scientific program will consist of five invited lectures and is intended to be offered to a wide audience of mathematicians.

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Program

9:30-10:00 Opening session

Vincenzo Milanesei

(Rector of the University of Padua)

Alberto Facchini

(Head of the Department of Pure and Applied Mathematics)

10:00-11:00

Antonio Ambrosetti

(SISSA, Trieste, Italy)

"Critical Point theory and nonlinear problems"

11:00-11:30 coffee break

11:30-12:30

François Loeser

(Ecole Normale Supérieure, Paris, France)

"From counting points to motivic integration: the geometry behind computing integrals"

12:30-13:00

Congratulations to the winner of the Young researchers in Mathematics competition and short talk by the latter

break for lunch

15:00-16:00

Alberto Bressan

(Penn State University, USA)

"On the optimal harvesting of marine resources"

16:00-17:00

Claus Michael Ringel

(University of Bielefeld, Germany)

"Tilting Theory - the Art of Losing Modules"

17:00-17:30 coffee break

17:30-18:30

Wolfgang Johann Runggaldier

(University of Padua, Italy)

"Contagious default: application of methods of Statistical Mechanics in Finance"

18:30 Closing session

For organizational reasons, those who intend to participate at the meeting are asked to send a confirmatory e-mail to the Secretary. People who would like to take part in the dinner with the speakers are asked to contact the Secretary before March 2.

Antonio Ambrosetti

Professor of Mathematical Analysis at the Scuola Internazionale Superiore di Studi Avanzati (SISSA) in Trieste, he was born at Bari on November 25, 1944, and completed his laurea at the University of Padova in 1966. He has received numerous awards and prizes, including the Caccioppoli Prize in 1985 and Ferran Sunyer i Balaguer prize in 2005. He was awarded the Chaire Lagrange, Paris in 1991, the Foundation B. B. V. chair at Madrid in 1998, and the Iberrola Chair at Madrid in 2001. He also received in 2005 a Laurea honoris causa at the Universidad Autónoma de Madrid. He is member of the Accademia dei Lincei of the Accademia delle Scienze of Turin and of the Istituto Veneto. He has been a visiting professor at the University of Wisconsin (Madison), Chicago, Texas (Arlington), Rutgers, E. T. H. in Zurich, the E. P. F. L. in Lausanne, Bochum, Bonn, Bremen, Prague, Paris VI, Paris IX, Madrid, Granada, Waseda (Tokyo). He has been plenary speaker at numerous international congresses, and is a member of the editorial board of 15 international journals, the Scientific Committee of the INDAM (1995-99) and the IAN of Pavia (1992-2001). He is the author of more than 110 articles and 4 books.

He is considered one of the world's leading experts in non linear Mathematical Analysis. His research activity is primarily in the theory of bifurcation, the calculus of variations, Hamiltonian systems, elliptic equations and non-linear Schroedinger equations.

Alberto Bressan

He is a Distinguished Professor at Penn State University, and was born in Venice on June 15, 1956. He took his laurea in mathematics at the University of Padova in 1978. He has worked at the University of Colorado at Boulder and SISSA (Trieste, Italy). In 2002 he gave a plenary conference at the International Congress of Mathematicians in Peking. In 2006 he won the Feltrinelli Prize for Mathematics, Mechanics and applications. He is a member of the editorial board of 14 international journals, and is the author of more than 110 articles.

His primary research interests are in the area of ordinary differential equations and differential inclusions, the theory of non-linear controls, blow-ups for non-linear partial differential equations, as well as the theory of non-linear hyperbolic systems with particular reference to conservation laws.

François Loeser

François Loeser is currently Professor of mathematics at Ecole Normale Supérieure (from 2000) where he is in charge of the Equipe "Groupes et Géométrie". He was born on August 25, 1958.

He has been appointed Distinguished Ordway Visiting Professor 2006 at University of Minnesota, Minneapolis. In 2005 he was one of the main lecturer at the AMS Summer Institute in Algebraic Geometry that takes place every ten years. He has been main editor for the journal Astérisque from 1993 to 2000. At the present he is among the editors of three international journals and of the Rendiconti del Seminario Matematico di Padova. He is author of 43 articles and editor of 2 books. He is mostly known for his work on Motivic Integration (partly in collaboration with Jan Denef). His mathematical spectrum includes Singularities and Algebraic Geometry (Hodge Theory, D-modules, exponential sums, L functions, and Motives) and more recently Model Theory.

Claus Michael Ringel

Professor at the University of Bielefeld, born on February 10, 1945, Ph.D. degree in 1969 at the University of Frankfurt am Main, he completed his Habilitation in 1972 at the University of Tübingen.

He is a member of the editorial board of 2 international journals, is the author of more than 140 articles and three books, and has edited various proceedings volumes for international mathematics conferences.

He has been a visiting professor at many Universities, including Beijing Normal University, University of Science and Technology Hefei (China), UNAM Mexico, Carleton University at Ottawa, Brandeis University at Waltham, Universities of Antwerp, Leeds and Trondheim. He got an honorary Ph.D. from the University of Trondheim in 2004, and was selected as "Highly cited Researcher" by ISI.

He is one of the founding fathers of the modern theory of representation of algebras, to which he has made fundamental contributions. He is a dedicated and enthusiastic popularizer of algebraic and mathematical themes of various types by way of the conferences that he gives throughout the world and his publications dedicated to secondary schools.

Wolfgang Johann Runggaldier

Professor of Mathematical Statistics at the University of Padova. He was born in Ortisei on January 25, 1942, and he completed his laurea at the University of Padova in 1964. He has been a visiting professor at Brown University, the Massachusetts Institute of Technology, INRIA, IIASA, the Isaac Newton Institute for the Mathematical Sciences, the University of Evry, the University of Technology of Sydney, and the Universities of Paris VII and Osaka.

He has been a member of the editorial board of 4 international journals, the Scientific Committee of the INDAM, of IAMM/IMATT in Milan, and of IIASA in Vienna.

He is author of about 120 scientific articles. He has organized various conferences/workshops as well as Summer Schools.

His research activity is primarily in the area of stochastic dynamical systems, with special reference to filtering and stochastic control, now mainly with applications to finance.

Young researchers in Mathematics competition

The Department of Pure and Applied Mathematics of the University of Padova (DMPA), on occasion of its 20th Anniversary, is sponsoring a competition for young researchers in Mathematical Sciences who have conducted their research for at least one year in the framework of the Department.

The goal of this initiative is to publicize the results obtained and further stimulate the attention of the Department for their activity.

The winner will have occasion to presents his/her work during the Meeting.