Department of Mathematics
University of Rome Tor Vergata

MATH@TOV
Excellence Project 2018-2022
NEWSLETTER
N°10 July – September 2020

Edited by: D. Bartolucci and M. Abundo, L. Arosio, L. Caramellino, T. D'Aprile, F. Flamini, E. Gandola, C. Garoni.

Due to the Covid-19 emergency some scheduled activities have been suspended/postponed.
We will promptly report about these activities in the next newsletters.

Presentation

The Department of Mathematics of the University of Rome Tor Vergata is distinguished by first class research, often motivated by applications from theoretical physics, astronomy, aerospace, finance, technology and medical science, a high level educational system, and the organization of events in the context of the so-called third mission of the University. For details we refer to the Department's website, http://www.mat.uniroma2.it

The Department aims to increase its leading role in research, math education and math culture. The recently awarded national Excellence Project 2018-2022, denoted by MATH@TOV, offers the opportunity to face new challenges, and its main objectives are:

- foster new collaborations between staff members on advanced research themes
- hire excellent staff members, able to participate in multiple research projects
- stimulate the interaction with excellent math groups, both in public research institutions and industry, and transform the Department into a strategic asset for the development of highly advanced mathematics and its application to specific problems
- increase the international visibility of the Department
- improve the Master and PhD Programs in Mathematics
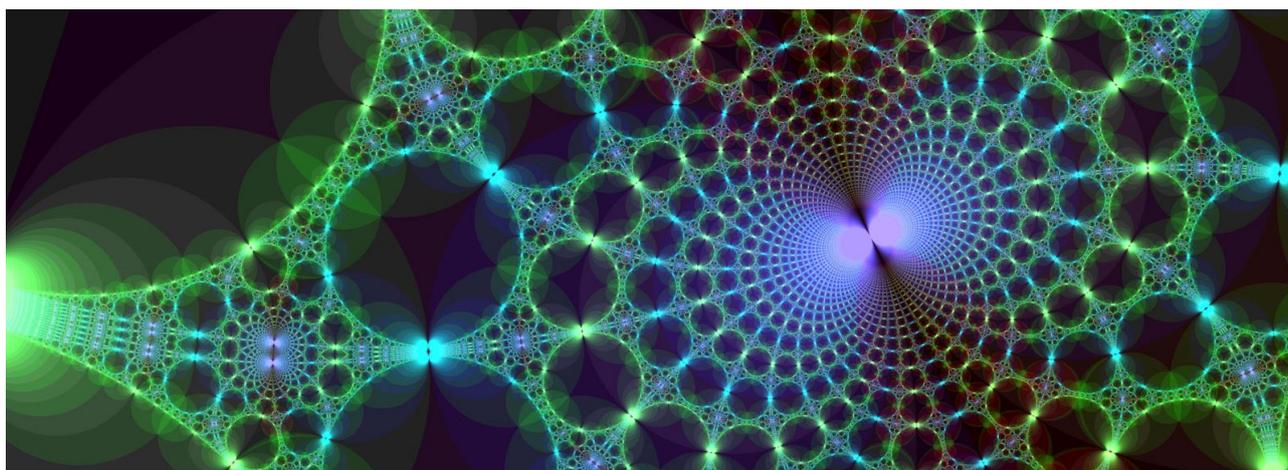- intensify the spreading of Math Culture

See the web page of the project MATH@TOV: http://www.mat.uniroma2.it/Progetto/

Since April 2020 the former P.I. of the project
Prof. A. Celletti is member
of the ANVUR governing council.
The Department would like to express his warmest thanks to Prof. A. Celletti for Her invaluable effort in the project planning and development.
She has been succeeded by the new P.I.
Prof. D. Marinucci.

Recruitment

The MIUR Excellence Grant (CUP E83C18000100006, 2018-2022), awarded to the Mathematics Department of the University of Rome Tor Vergata (project MATH@TOV), provides funds for Assistant and Associate Professorships as well as for Postdoc Positions.

Professorships

- The following "Tenure-Track" Assistant Professorships (RTD-B) selection procedure is in progress:

    - 1 position in Algebra (Settore concorsuale 01/A2 - Settore Scientifico Disciplinare MAT/02)

http://web.uniroma2.it/module/name/Content/newlang/italiano/action/showpage/navpath/CON/content_id/79316/section_id/6206

The position is for three years and, after evaluation, can be converted in tenured Associate Professorships; they will be awarded through a public competition. Applicants must have at least three years of experience after PhD completion, and an already established research record. Selection procedures are in progress. More information will appear soon on http://www.mat.uniroma2.it/Progetto/recruitment.php

We also congratulate:

- Dr. Michele Salvi, winner of of the "Tenure-Track" Assistant Professorships (RTD-B) position in Probability and Mathematical Statistics (Settore concorsuale 01/A3 - Settore Scientifico Disciplinare MAT/06)

Postdoc positions

The following Postdoc positions selection procedures are in progress:

- 1 (one-year) Postdoc position (Assegni di Ricerca - III Fascia) in Mathematical Analysis (Settore concorsuale 01/A3 - Settore Scientifico Disciplinare MAT/05) – Title: "C* algebre associate ai gruppi p-adici, Bi-esatezza e dinamica topologica"

- 1 (one-year) Postdoc position (Assegni di Ricerca - III Fascia) in Mathematical Physics (Settore concorsuale 01/A4 - Settore Scientifico Disciplinare MAT/07) – Title: "Metodi operatoriali per sistemi quantistici a un numero infinito di gradi di libertà"

See http://concorsionline.uniroma2.it

We also congratulate:

- Dr. Mayer Martin Gebhard, winner of the (one-year) Postdoc position (Assegni di Ricerca - III Fascia) in Mathematical Analysis (Settore concorsuale 01/A3 - Settore Scientifico Disciplinare MAT/05) – Title: "Progetto Dipartimento di Eccellenza (Polo Matematica Pura) P.D.E."

- Dr.ssa Cristina Urbani, winner of the (one-year) Postdoc position (Assegni di Ricerca - III Fascia) in Mathematical Analysis (Settore concorsuale 01/A3 - Settore Scientifico Disciplinare MAT/05) – Title: "Controllo di equazioni a derivate parziali con applicazioni ai modelli climatologici".

- Dr. Aleksei Bykov, winner of the (one-year) Postdoc position (Assegni di Ricerca - III Fascia) in Mathematical Analysis (Settore concorsuale 01/A3 - Settore Scientifico Disciplinare MAT/05) – Title: "Algebre di operatori e applicazioni alla teoria dei campi sullo spazio tempo quantistico"

Research

Thematic Semesters

During the period January 2020 - September 2020, MATH@TOV organized a thematic semester with a series of seminar talks on the following main areas (cf. also http://www.mat.uniroma2.it/Progetto/short-visit.php):

Operator Algebras and Quantum Field Theory

- Among others, we mention the talks of Y. Navoi (University of Sydney, Australia), M. Mueger (Nijmegen, Holland), Y. Naqvi (University of Sydney, Australia), P. Grossman (University of Sydney, Australia), M. Reineke (RUHR Universität, Bochum), Y. Kawahigashi (University of Tokyo).

Holomorphic dynamics and geometry of complex manifolds and spaces, and their interplay

- Among others, we mention the talks of Y. Kozitsky (Lublin, Polonia), G. Bharali (Indian Institute of Science), F. Larusson (Adelaide).

Mathematical techniques for Earth and Space Science

- Among others, we mention the talks of G. Polenta (A.S.I. Italian Space Agency), A. Boscaggin (University of Turin), C.Q. Cheng (University of Nanjing, China), L. Valvo (CPT Luminy), A. Bach (Technische Universität, Munich), C. Gales (University A.I. Cuza, Iasi, Romania), C. Efthymiopoulos (Academy of Athens and University of Padova), A. Marigonda (University of Verona), T. Scarinci (University of Vienna), R. Ruggiero (P.U.C. Rio de Janeiro), V. Barutello (University of Turin), A. Procacci (Belo Horizonte), B. Pelloni (Heriot-Watt University, UK), T.M. Seara (UPC Barcelona), J. Gimeno (CRM Barcelona), M. Viana (IMPA Rio de Janeiro), M. Ghil (ENS & PSLU Paris and UCLA Los Angeles), M. Maggioni (Leiden, Netherlands), F. Pène (Université de Bretagne Occidentale).

PDE's of Liouville type in Physics and Geometry

- Among others, we mention the talks of C. Bandle (University of Basel), M. Del Pino (University of Bath), M. Mayer (University of Rome "Tor Vergata"), M.J. Esteban (Université de Paris-Dauphine).

Algebraic Geometry

- Among others, we mention the talks of M. A. de Cataldo (Stony Brook), R. Schwartz (Brown University), A. L. Knutsen (University of Bergen, Norway), P. Dlotko (Swansea University), L. Caporaso (University of Rome "Tre").

Numerical analysis - aeronautic and aerospace design

- Among others, we mention the talks of J. Peters (University of Florida, USA), J. Zhang (Carnegie Mellon University, USA), T. Lyche (University of Oslo, Norway).

Probability theory and statistics - data analysis in cosmology

- Among others, we mention the talks of A. Lerario (SISSA, Trieste), D. Marinucci (University of Rome "Tor Vergata"), M. Gordina (University of Connecticut), E. DeVito (University of Genova), P.Pigato (University of Rome "Tor Vergata", Minicourse on "Fractional Brownian Motion").

Conferences and Workshops

MATH@TOV is funding a wide activity of conferences/workshops/advanced lecture series/schools. Recent and next events are listed below.

Seminars on machine learning and topological data analysis

This is a mini series of seminars given by young researchers who answered to the July call of interests.
It is scheduled on October 8/9/12th.

October 8th : S. Vigogna (University of Genova)
October 9th : A. Troiani (University of Padova)
October 12th : N. Otter (University of California at Los Angeles)

Link: http://www.mat.uniroma2.it/Progetto/seminars.php

Colloquia

The seminars are online. We use the Teams platform.
November 5th : F. Catanese (University of Bayreuth)

Link: http://www.mat.uniroma2.it/Progetto/seminars.php

Complex Analysis Seminars

The seminars are online. We use the Teams platform.
Link: https://sites.google.com/view/complex-analysis-seminar/home-page

Organizers:
Filippo Bracci (University of Rome "Tor Vergata")
Marco Peloso (University "Statale di Milano")
Nicola Arcozzi (University of Bologna)

Joint seminars series A.S.I. – Mathematics Department

The Department of Mathematics and the Italian Space Agency organize a joint seminar series in the frame of Excellence Project. The next scheduled event is:

Mini-Workshop A.S.I. – DeCifris – Tor Vergata: Cybersecurity

Date: November 20, 2020
The talks will be held online. The links will be available on the Department of Mathematics web page and on the Linkedin channel of the DeCifris society.
Links: https://www.mat.uniroma2.it/,
https://www.linkedin.com/in/de-componendis-cifris-iniziativa-nazionale-8274501a5/

Organizers:
Domenico Marinucci (University of Rome "Tor Vergata")
Giulio Codogni (University of Rome "Tor Vergata")

Publications

Publications realized, within the excellence Department project MATH@TOV, by members of the Department and their co-authors are listed in the web-page
http://www.mat.uniroma2.it/Progetto/publications.php

High level teaching activities

Some MATH@TOV funds have been employed to tackle the economic and social emergency caused by the COVID-19 pandemic. More precisely, the Department has financed the following loans and special prizes for enrolments during the AY 2020/2021:
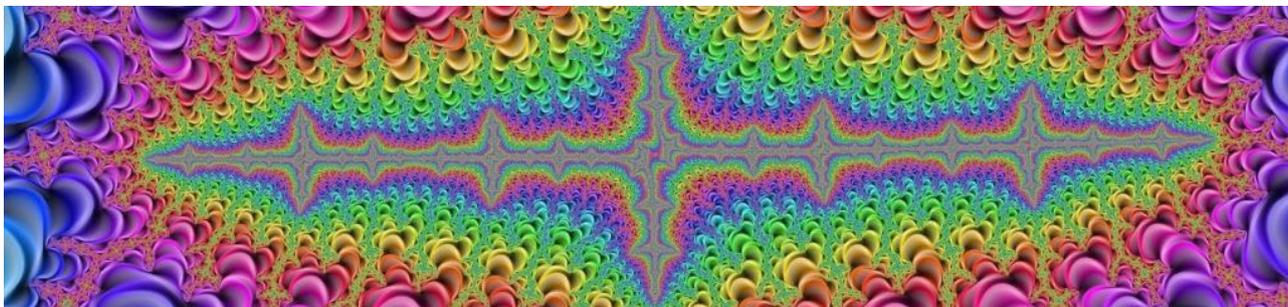
- Free loans of computers, webcams and internet connection devices, to be assigned to students who need it to take online courses and online exams. Those who need such support can request it, in a completely confidential way.
- Special prizes for a total of 22,500 euros for students enrolled in the AY 2020/21 of the Master's Degree Course in Pure and Applied Mathematics.
- All prizes have variable amounts starting from 1,000 euros and are in addition to those announced annually for deserving students of the Master's Degree.

PhD School in Mathematics - Courses

Due to the Covid-19 emergency, special courses for the Ph.D. School in Mathematics given by visiting scholars, to be held in the period September 2020 - March 2021 and organized within the excellence Department project MATH@TOV, will probably be delivered online or postponed.
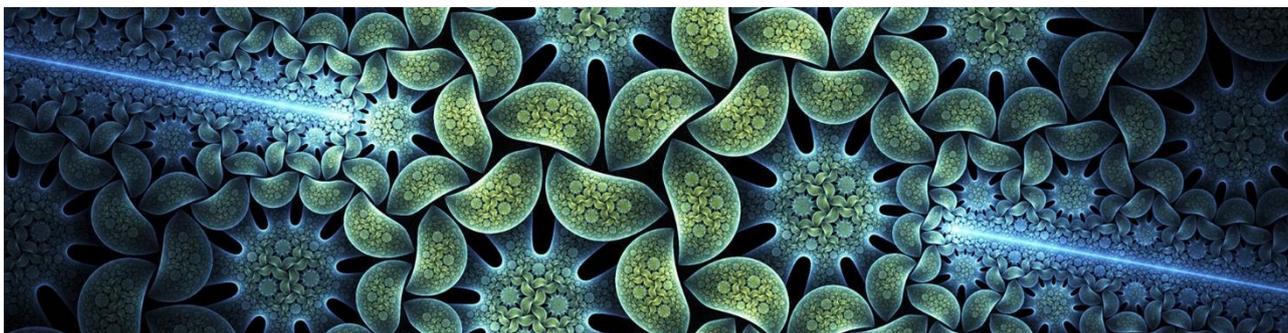More info at the Ph.D. web-page http://www.mat.uniroma2.it/%7Edott/corsi.html.

General Activities

Funds from MATH@TOV project have been used to renovate the department's classrooms with supplies suitable for dealing with the COVID emergency. In particular, the classrooms have been equipped with furniture appropriate to physical distancing (for example new seats) and with up-to-date computer equipments for the remote transmission of seminars and master's degree lectures.

The seminars rooms 1200,1201,1101,1103 have been fully renewed. Moreover 30 office desk chairs and 50 guest chairs have been acquired.

Third mission

In July, online orientation meetings were held for students interested in enrolling in the department's courses of study. The meetings concerned general information and the presentation of some scientific topics of interest. In September, the definition and planning of activities with schools was started, with specific attention to PCTO (Percorsi per Competenze Trasversali e l'Orientamento) paths with students.