



Department of Mathematics
University of Rome Tor Vergata



MatMod@TOV
Excellence Project 2023-2027
NEWSLETTER
N°6 May 2025 – September 2025



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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:

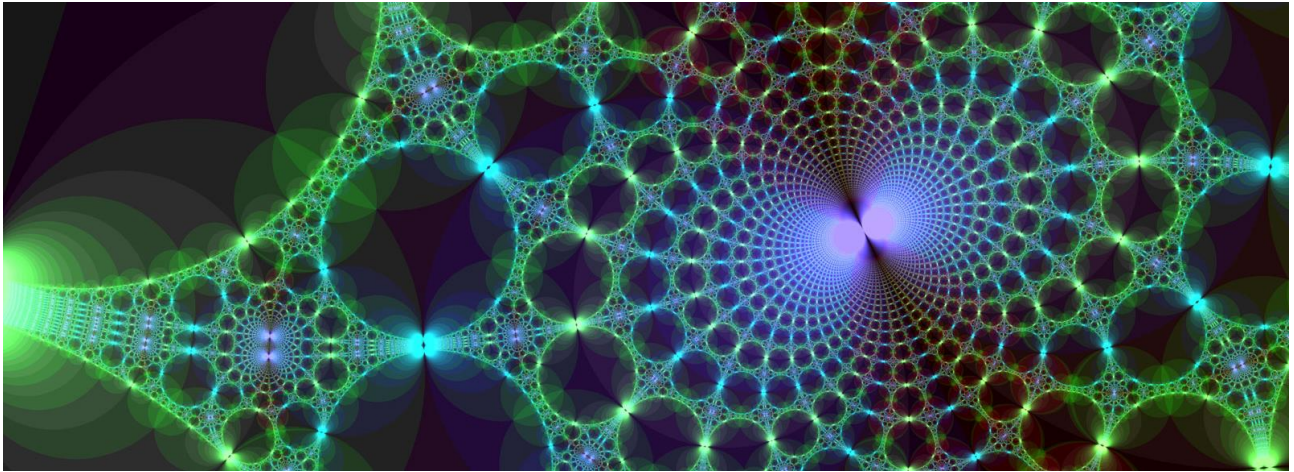
<https://www.mat.uniroma2.it/index.php>

The Department aims to increase its leading role in research, math education and math culture. The recently awarded national Excellence Project 2023-2027, denoted by MatMod@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 MatMod@TOV: <https://www.mat.uniroma2.it/progetto/>

Recruitment



The MIUR Excellence Grant (CUP E83C23000330006, 2023-2027), awarded to the Mathematics Department of the University of Rome Tor Vergata (project MatMod@TOV), provides funds for Assistant and Associate Professorships as well as for Postdoc Positions.

All details at <https://www.mat.uniroma2.it/progetto/recruitment.php>

Postdoc positions

We congratulate:

- Dr. Matteo Veglianti, winner of the (one year) Postdoc position (Assegni di Ricerca - III Fascia) in Mathematical Physics (Gruppo Scientifico Disciplinare 01/MATH-04 – Settore Scientifico Disciplinare MATH-04/A) – Title: “Dinamica rotazionale con effetti mareali”.

Research



Research Topics

During the period October 2024 – December 2024, MatMod@TOV organized a series of seminar talks/collaborations about the following main research topics:

- 1) Dynamical Systems and Statistical Physics
- 2) Quantum Field Theory and Quantum Information Theory
- 3) Mathematical Modelling and PDE's
- 4) Topological Data Analysis
- 5) Algebraic Geometry and Applications
- 6) Mathematical Modelling in Celestial Mechanics and Space Applications
- 7) Mathematical Modelling, Probability, Statistics and Machine Learning
- 8) Mathematical Modelling and Numerical Analysis
- 9) Mathematical Modelling and Climate Change

This is a partial list of the invited speakers/collaborators during the period: K. T. Nguyen (North Carolina State University), Y. Bae (University of Michigan), J. Baudin (EPFL), T. Lyche (University of Oslo), W. Castryk (KU Leuven), P. Ambrosio (University of Bologna), A. Diana ("Sapienza" University of Rome), C. Ciliberto (University of Rome "Tor Vergata"), T. Seara (UPC Barcelona), S. K. Pattanayak (Indian IT Kanpur), E. Sofos (Glasgow University), N. Nabijou (Queen Mary University London), A. Zuk (Paris 7), A. Vig (University of Michigan), S. Marò (University of Oviedo), G. Galise ("Sapienza" University of Rome), M. Yamamoto (University of Tokyo), N. Ressayre (University of Lion), T. Gerber (University of Lion), I. Koot (FAU Erlangen-Nürnberg), A. M. Jaffe (Harvard University), J. Rau (Universidad de Los Andes, Bogotá), S. Hollands (University of Leipzig), C. Raymond (University of Hamburg), R. Assouline (Institut de Mathématiques de Jussieu-Paris Rive Gauche), F. Paganelli ("Sapienza" University of Rome), A. Avitabile (University of Rome "Tor Vergata"), G. Di Matteo (Scuola Superiore Meridionale - Napoli).

(cf. also <https://www.mat.uniroma2.it/seminari-new2.php?inizio=0&pagina=1>)

Colloquia

- **Masahiro Yamamoto** (University of Tokyo)
Title “Inverse problems enabling us to detect invisible shapes and properties”
Date: June 18th, 2025

Conferences and Workshops

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

- **Workshop (INdAM): Far Methods for Isogeometric Analysis**
Date: May 5th-9th 2025
Place: National Institute of High Mathematics (INdAM) “Francesco Severi”
Organizers: M. Mazza, H. Speleers (University of Rome “Tor Vergata”), M. Montardini (University of Pavia), <https://www.mat.uniroma2.it/~speleers/indam2025/>
- **Workshop (INdAM): Mathematical Perspectives in Scientific Modeling**
Date: May 28th-30th 2025
Place: Department of Mathematics and Villa Mondragone “Tor Vergata”
Organizers: F. Bracci, C. Manni, D. Marinucci, A. Porretta (University of Rome “Tor Vergata”), https://www.mat.uniroma2.it/progetto/Events_pages/2025/Maps2025/page-maps2025.php
- **May 12: Celebrating Women in Mathematics, Shedding Light on Black Holes**
Date: June 6th 2025
Place: Department of Mathematics
Organizers: M. Lanini, D. Marinucci, E. Strickland (University of Rome “Tor Vergata”), <https://www.mat.uniroma2.it/may12.php>
- **A Day on Random Matrix Theory and Deep Learning**
Date: September 25th 2025
Place: Department of Mathematics
Organizers: D. Marinucci, S. Vigogna, M. Salvi (University of Rome “Tor Vergata”), <https://www.mat.uniroma2.it/~rds/randmat.php>
- **MathPolo 2025: A Mathematical Bridge Between Nanjing and Rome**
Date: October 2th-3th 2025
Place: Villa Mondragone and Department of Mathematics
Organizers: R.L. Greenblatt, V. Morinelli, M. Salvi, A. Sorrentino, H. Speleers (University of Rome “Tor Vergata”), https://www.mat.uniroma2.it/progetto/Events_pages/2025/Mathpolo2025/page-mathpolo2025.php
- **Computational Aspects of Complex Networks and Artificial Intelligence**
Date: December 3th 2025
Place: Department of Mathematics
Organizers: D. Bertaccini, A. Clementi (University of Rome “Tor Vergata”), <https://www.mat.uniroma2.it/bertaccini/CACN25/>

RoMaDS

(Rome Center on Mathematics for Modeling and Data ScienceS)

Recently founded by MatMod@TOV project, the aim of the center is to contribute to the development of mathematical research in the field of modelling and data science through the organization of seminars, conferences and doctoral courses (<https://www.mat.uniroma2.it/~rds/events.php>).

Even more important is the possibility of establishing a permanent forum for the interaction between mathematical research and actual applications. In particular, the interdisciplinary nature of the center allows the creation of stable interactions between those involved in mathematical techniques of data analysis in different departments of the University. At the same time, our goal is to foster interactions with other research centers and even outside the strictly academic sphere.

<https://www.mat.uniroma2.it/~rds/about.php>

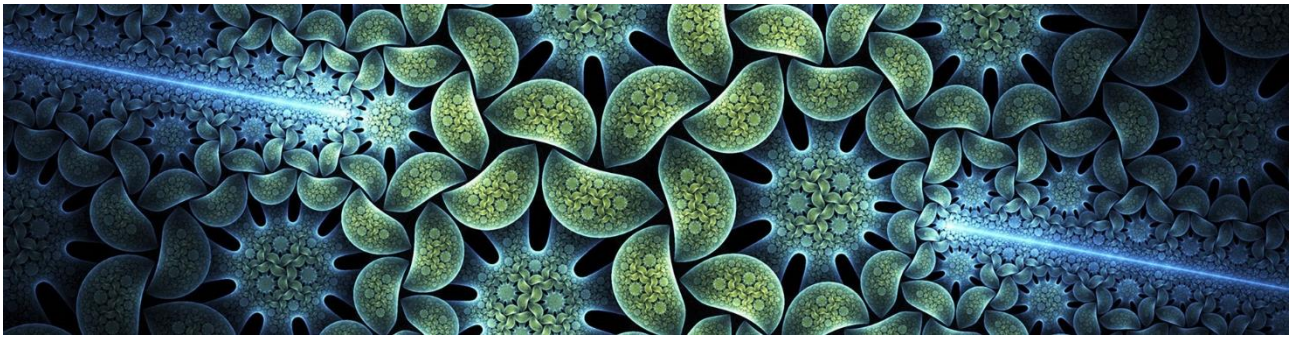
High level teaching activities



Grants and Curriculum of Excellence

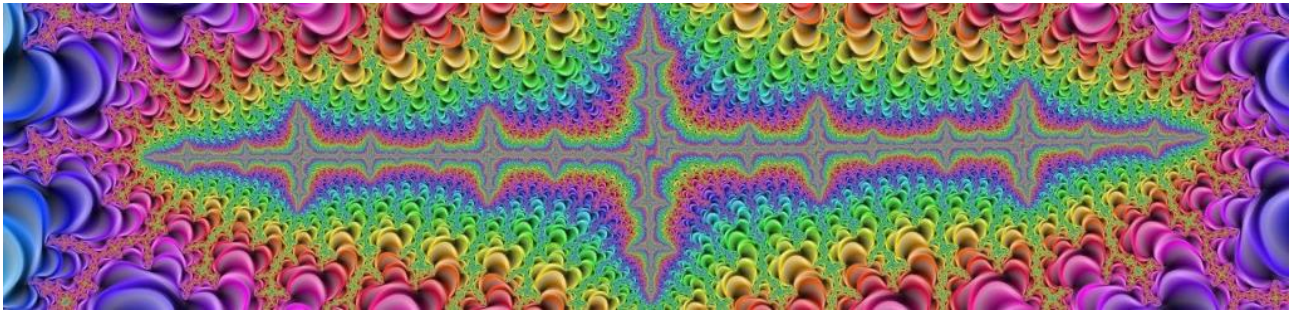
- MatMod@TOV funded 3 prizes, for an amount of 2,000.00 euros each, for master's students enrolled in the academic year 2025/2026 and 3 degree prizes, for an amount of 2,000.00 euros each, for master's graduates in Pure and Applied Mathematics at Tor Vergata from July 2024 to June 2025. The latter award is aimed at master's theses satisfying at least one of the following conditions: a significantly original result; an efficient implementation and/or a particularly significant numerical experimentation; a clear and in-depth presentation of highly significant results.
- The project MatMod@TOV awards a €1,500 fellowship to a master's student to promote international mobility among those enrolled in its study programs. The fellowship will be granted to the candidate who has received an Erasmus+ study grant, based on the ranking established in the University's Erasmus+ call for applications for the 2025/26 academic year.

Third mission



- Liceo Matematico. As the school year ended, the Liceo Matematico High Schools affiliated with the Department of Mathematics organized dissemination activities. Specifically, at the Tullio Levi Civita Scientific High School, students could see the mathematical machines built by the students to draw conic sections.
- On May 6, 2025, the schools participated in the national "Mathematics High School Afternoon" initiative, which included a prize competition on the theme "If Mathematics Were a Movie."
- Mathematics Olympiad. On June 5, 2025, the Department of Mathematics hosted the Senior Internship admission test: approximately one hundred students took a two-and-a-half-hour multiple-choice math test. The test is part of the national selection process organized by the Mathematics Olympiad Project of the Italian Mathematical Union. The Senior Internship is a seven-day preparation course for international competitions, held annually in Pisa in the first half of September.
- Summer School 2025 [<https://orientamento.uniroma2.it/2025/04/28/scuola-estiva-di-matematica-di-base-per-stem-ii-edizione/>] The second edition of the STEM Basic Mathematics Summer School took place from June 17th to 26th. Approximately two hundred third- and fourth-year high school students spent three days at our University, taking short mathematics courses (which included topics other than those covered in school), interacting with STEM degree program coordinators, and participating in orientation initiatives. The summer school encourages a study of mathematics that focuses not on repeating protocols, but on understanding their underlying mechanisms. The school is organized by the University Orientation Center, the Engineering POT, and the Piano Lauree Scientifiche in Mathematics.
- Cantieri per la Scuola [<http://crf.uniroma2.it/2025-2026/cantieri-per-la-scuola>] On September 24, the Department of Mathematics organized a training initiative for secondary school teachers on the topic of laboratory teaching of mathematics. Antonio Veredice and Ginevra Presen (G. Peano High School, Monterotondo) presented an activity on author recognition in literary texts: Montale or Leopardi? Let's ask Chat. Lorenzo Mazza (MIM) spoke on Mathematics in Play, emphasizing the educational role of play. Elena Scalambro (University of Turin) presented Errors in the History of Probability. The topic of using the history of mathematics in teaching was also addressed by Cristina Sironi (University of Tor Vergata) and Laura Lamberti (A. Righi High School, Rome), who described their activity From the Method of Adequation to Differential Calculus. A Workshop on Original Texts: Applications and Results.
- Two laboratory activities were carried out: Pietro Milici (University of Messina) worked on the topic Touching the transcendence: machines for infinitesimal analysis, while Giovanna Guidone (Liceo T. Calzecchi Onesti, Fermo) worked on an introduction to topology: The donut that thought it was a torus.

General Activities



MatMod@TOV is also meant to fund renovations of rooms/laboratories of the Department, acquisition of modern equipment, research books, etc.

- 28 new computer stations for research purposes were purchased through the “2025 IT Call”.
- 20 new tablet and mobile devices for research purposes were purchased through the “2025 IT Call”.

HIGH PERFORMANCE COMPUTER SERVER

- Maintenance from 01.07.2025 to 30.06.2026 n. 2 SERVER HPE DL360 gen10 s/n CZJ02504YC, CZJ02504YB, and n. 1 STORAGE MSA2052 s/n ACM020T28B
- Contract renewal number: 52621146 VMWARE VSPHERE FOUNDATION - 1 YEAR PREPAID COMMIT - PER CORE from 01/07/2025 to 30/06/2026
- CONTRACT #: 03394275 From 09/06/2025 to 08/06/2026 - VEEAM DATA PLATFORM FOUNDATION ENTERPRISE - WORKLOADS: 4 SOCKETS
- SmartUPS VT 30vVA s/n QS1929151008 from 01/07/2025 to 30/06/2026
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- Support extension 15.07.2025 - 14.07.2026 about Chassis: 5UF9118W7V - 5UF9118W7W, including: License Red Hat - Hpe Foundation
- Supply and installation of n. 2 Air Conditioners DIKIN CONFORA 12.000 BTU