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Faculty of Mathematics

Faculty of Mathematics
University of Vienna

Mathematics... the Language of the Universe

Radu Ioan Boţ
Dean of the Faculty of Mathematics
University of Vienna

The Faculty of Mathematics is one of the role model faculties of the University of Vienna, the leading mathematical institution in Austria and a center for mathematics with increasing reputation and visibility in Europe and the world.

The high-quality profile of the faculty is evidenced by its research achievements, which are highlighted by the continuous ranking among the world's best 40 mathematical institutions in the ARWU Shanghai Ranking in the last seven years. This is emphasized by the high number of third-party funding raised, the multifaceted interdisciplinary collaborations and the outstanding appointments of the last few years, making it an attractive workplace for excellent scientists.

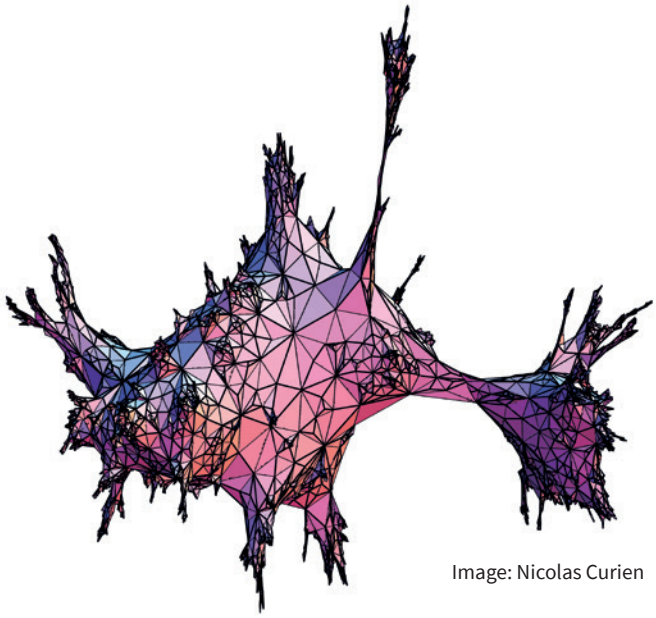

Image: Nicolas Curien

The faculty is a center for studying and training in mathematics in Austria, which is also evidenced by the wide range of Bachelor's and Master's degree programs, both in the field of science and in teacher training. The Master's program in Mathematics allows for specialization in a wide range of mathematical topics and has a great appeal to students from abroad. The faculty also contributes to the joint Master's degree programs with other faculties in the fields of Computational Science and Data Science. A beacon of the faculty is its Doctoral program in Mathematics and the associated doctoral school "Vienna School of Mathematics", a joint initiative of the mathematical faculties of the University of Vienna and TU Wien.

The faculty offers its expertise to state and public institutions on topics related to content development and teaching of mathematics at schools as well as to support of highly gifted students. In addition, an increasing number of faculty members are involved in collaborations with Austrian and international industry partners.

The faculty comprises **six Key Research Areas,** which, on the one hand, represent the traditional focus areas and strengths of the faculty and, on the other hand, are the result of the continuous evolvement of mathematics with regard to modern developments and synergies with other scientific disciplines. Furthermore, **Subject-Specific Didactics/School Mathematics,** whose proximity to subject science is of great importance for teacher training, is an important topic at the faculty.

Our Key Research Areas:

- Analysis, Geometric Structures and Mathematical Physics
- Applied and Computational Partial Differential Equations
- Arithmetics, Algebra, and Discrete Mathematics
- Biomathematics, Dynamical Systems, Mathematical Finance and Probability
- Computational Mathematics and Data Science (CoMaDa)
- Logic (Kurt Gödel Research Center)
- Subject-Specific Didactics / School Mathematics

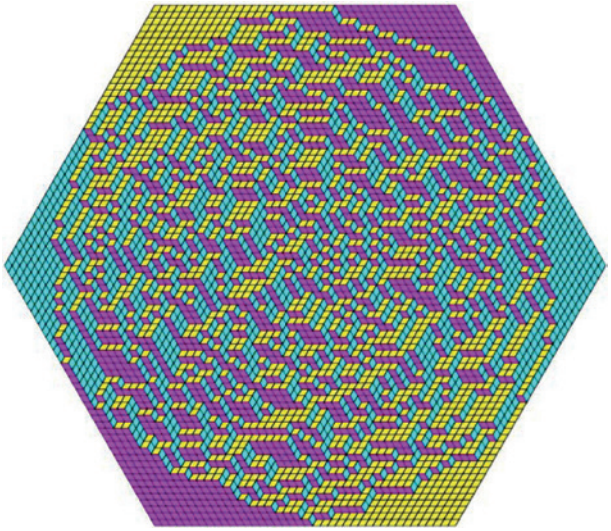

Image: Richard Kenyon

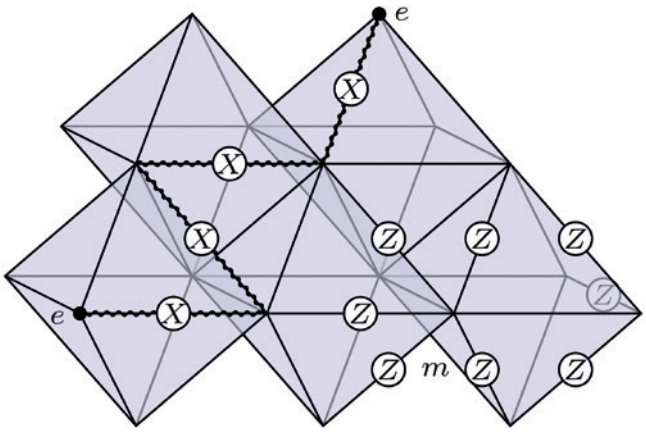

Image: Clement Delcamp, Norbert Schuch

With its research activities, the Faculty of Mathematics contributes significantly to the strategic priorities of the University of Vienna:

- Digital and Data-Driven Transformations of Science and Society
- Systems of Life – Foundations of Life
- Climate, Environment, Sustainability
- Global Health: Physical, Mental and Social Dimensions of Health
- Quantum Systems and Materials of the Future

The research activities at the Faculty of Mathematics are mainly financed by **third-party funding.**

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€13 million

In 2023, project funds amounting to **€ 13,031,310** were raised

2 applications per week

In 2023, 104 project applications were submitted

34th place

2023 Shanghai-Ranking mathematics worldwide

6th place

2023 Shanghai-Ranking mathematics within the EU

14 FWF START Awards

of which 7 have been awarded since 2016

Current Major Projects at the Faculty of Mathematics:

- ERC Starting Grant “Singularities and Symplectic Mapping Class Groups”
- ERC Consolidator Grant “Refined Invariants in Combinatorics, Low-Dimensional Topology and Geometry of Moduli Spaces”
- ERC Consolidator Grant “Symmetries and Entanglement in Quantum Matter“
- FWF SFB65 “Taming Complexity in Partial Differential Systems”
- FWF SFB68 “Tomography across the Scales”
- FWF SFB91 “Polygenic Adaptation”
- FWF SFB1002 “Discrete Random Structures: Enumeration and Scaling Limits”
- FWF Emerging Fields “A New Geometry for Einstein’s Theory of Relativity & Beyond”
- FWF DK “Vienna Graduate School on Computational Optimization”
- “Christian Doppler Laboratory for Mathematical Modeling and Simulations of Next Generations of Ultrasound Devices”

The Mathematics Study Programs at the University of Vienna represent an excellent academic education – their key aspects are the teaching of mathematical ways of thinking and the practical application of this knowledge to theoretical and practical issues.

3200 enrolled students

50% international students in the Master of Science

Scientific Branch:

- B.Sc. Mathematik
- M.Sc. Mathematics (in English)
- Doctoral Program Mathematics (in English)

Teaching Branch (compulsory to combine with a second subject; in cooperation with the Teacher Training Colleges (Pädagogische Hochschulen) in the Verbund Nord-Ost):

- BEd Teaching Subject Mathematics
- MEd Teaching Subject Mathematics
- BEd Teaching Subject Descriptive Geometry
- MEd Teaching Subject Descriptive Geometry

Interdisciplinary Master Programs:

- Computational Science
- Data Science

Since 2020, there has been a joint doctoral school of the University of Vienna and TU Wien in the field of mathematics: the **"Vienna School of Mathematics (VSM)".** The aim of the school is scientific education at the highest level in all areas of mathematics at the two most important mathematical centers in Austria. The school not only covers a large variety of mathematics topics, but is also very diverse and international. The majority of the currently approximately 150 members come from abroad.

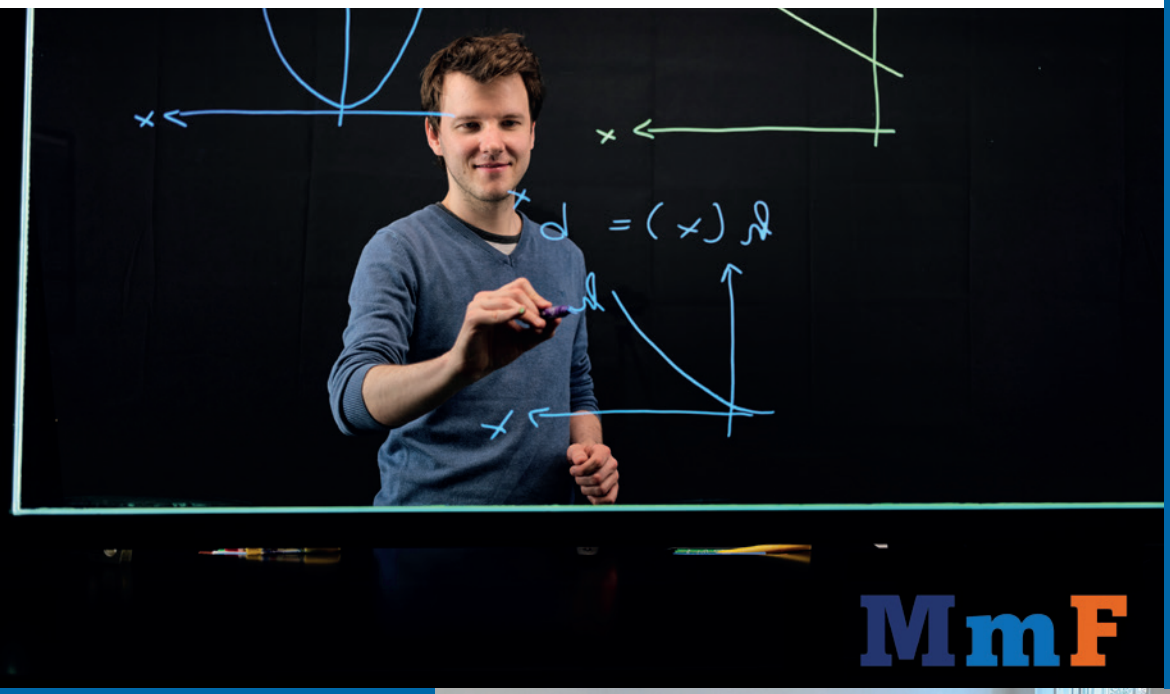
The Most Important Activities of the VSM are:

- Annual summer schools with top-class international guest lecturers
- Annual student retreats for exchange in a relaxed atmosphere
- Carefully planned mini-courses on current topics in mathematics and its fields of application
- Courses on transferable skills, in which a mathematics-specific preparation is important
- A PhD colloquium in which students give talks for each other

Vienna School of Mathematics

The Project Mathematik macht Freude (MmF):

- Development of innovative training scenarios for secondary school teachers, which are carried out in order to foster and support pupils, first-year and other students
- Development and further development of high-quality teaching and learning materials for teaching mathematics at secondary school as well as for transfer to college or university
- Training offers and support initiatives for young teachers
- Development of and/or participation in cooperative competitions for pupils interested in mathematics



Support for Talented Mathematics' Pupils:

- Mathematics courses for pupils, competitions, summer meetings
- Student competitions, problem solving seminar
- Training for teachers to promote talented pupils

UNSER SPIELFELD. MEINE ENTSCHEIDUNGEN.

Das Energiesystem der Zukunft: Voller Spannung, Bewegung und Chancen. Uns treibt der Stolz auf das, was wir für Österreich bewirken. Gestalter der Energiewende zu sein, fordert uns. Hochgesteckte Ziele erst recht. Einzigartiges Fachwissen, volles Vertrauen. Eigene Entscheidungen, volle Verantwortung. Das ist unser Spielfeld. Das ist APG.

Text: APG, **Foto:** APG / Florian Sturzenböck

WIR ERMÖGLICHEN DIE ENERGIEWENDE

Die Austrian Power Grid AG (APG) trägt als heimischer Übertragungsnetzbetreiber die Verantwortung dafür, Österreich 365 Tage im Jahr zuverlässig mit Strom zu versorgen und das Land seinen Klimazielen näherzubringen. Werde Teil unseres Teams und gestalte die Energiewende mit. Die APG bietet engagierten Talenten vielfältige spannende Aufgaben.

GUT FÜRS KLIMA UND SICHERER JOB

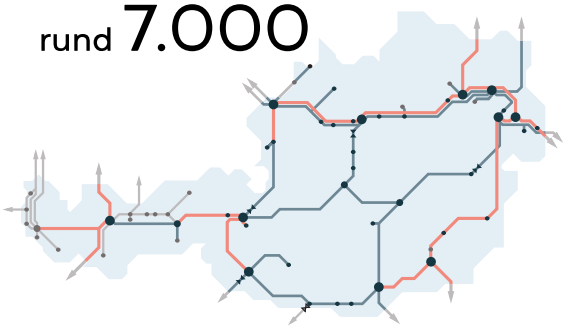
Nur ein starkes Übertragungsnetz macht es möglich, Energie aus Wind, Wasser und Sonne nachhaltig in Österreichs Energieversorgungssystem zu integrieren – deshalb wird APG bis 2032 insgesamt rund 3,5 Milliarden Euro in den Netzaus- und -umbau investieren. Somit bieten wir unseren Spezialist:innen eine langfristige Perspektive mit vielen Entwicklungsmöglichkeiten.

Benefits:

- Attraktives Zeitmodell mit größeren Freizeitblöcken
- Bereichsübergreifende Projekte
- Private Krankenzusatzversicherung, Pensionskasse
- Familienfreundliche Arbeitgeber:in
- Betriebliche Gesundheitsvorsorge
- Work Life Balance
- Kinderzulage
- iPhone & Laptop (Dell) zzgl. Bildschirmen, Tastatur, Webcam, Headset
- Gefördertes Mittagessen
- Flexible Arbeitszeiten und Home Office Möglichkeiten
- Zahlreiche Weiterbildungsmöglichkeiten
- Rabatte, Gutscheine, Sonderkonditionen

*abhängig von Berufsbild und Abteilung

Stromnetz in km: rund 7.000



Mehr zur Karriere bei APG unter

apg.at/karriere

Österreich braucht Strom. APG

www.apg.at/karriere

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