7th VSM Call for Applications (March 2023; application deadlines see below)

1. Up to four PhD positions financed by the VSM (University of Vienna)
For these positions (directions for) PhD projects have been proposed. Applications are only possible for specific projects from the list. **Application deadline: April 21, 2023**
List of projects (in alphabetical order):
1. Towards a Geometric Understanding of the Space of Stochastic Processes (Supervisors: Julio Backhoff, Mathias Beiglböck)
2. Frame Theory for Understanding Neural Networks (Supervisors: Peter Balazs, Martin Ehler)
3. Fast Continuous Time Dynamics for Monotone Inclusions (Supervisor: Radu I. Boţ)
4. Higher Order Mixing in Parabolic Dynamics (Supervisor: Henk Bruin)
5. Low-Rank Tensor Decompositions in Scientific Machine Learning (Supervisors: Vladimir Kazeev, Philipp Petersen)
6. Combinatorics (Supervisor: Christian Krattenthaler)
7. Distributional and Synthetic Curvature Bounds (Supervisor: Michael Kunzinger)
8. Topics from the Langlands Program (Supervisor: Alberto Mínguez)
9. Deep Neural Network Learning of Functions with Distributed Singularities (Supervisor: Philipp Petersen)
10. Repulsive Point Processes in Functional and Signal Analysis (Supervisor: José Luis Romero)
11. Basic and Elliptic Appell Hypergeometric Series (Supervisor: Michael J. Schlosser)
12. Mathematical Structure of Tensor Network States (Supervisor: Norbert Schuch)
13. Quantum Many-Body Problems for Near Term Quantum Computers (Supervisor: Norbert Schuch)
14. Synthetic Singularity Theorems in Lorentzian Length Spaces (Supervisor: Roland Steinbauer)
15. Rare Events – Probabilistic Laws from Deterministic Dynamics (Supervisor: Roland Zweimüller)

2. Landau-Lifshitz-Gilbert Equation (TU Wien, Supervisors: Michael Feischl / Dirk Praetorius)
Up to 3 positions; **application deadline: April 21, 2023**

3. Geometric Flows, Curvature Problems, Convex Geometry (TU Wien, Supervisor: Mohammad N. Ivaki); **application deadline: April 21, 2023**

4. Cross-Diffusion Systems for Tumor Growth: Finite-Volume Approximation and Stability Analysis (TU Wien, Supervisor: Ansgar Jüngel); **application deadline: April 21, 2023**

5. Numerical Methods for Nonlocal Operators (TU Wien, Supervisor: Markus Melenk); **application deadline: April 21, 2023**

6. Algebraic and Model Theoretic Methods in Infinite-Domain Constraint Satisfaction (TU Wien, Supervisor: Michael Pinsker); **application deadline: April 21, 2023**

7. Adaptive Low-Rank Approximation for the Data-Driven Exploration and Solution of PDEs (University of Vienna, Supervisor: Vladimir Kazeev); **application deadline: May 31, 2023**

8. Combinatorial Enumeration Problems and Enumerative Algebraic Geometry (University of Vienna, Supervisors: Balázs Szendrői, Ilse Fischer)**; application deadline: April 30, 2023**