3rd VSM Call for Applications (Deadlines: October 8, 2020/October 20, 2020/November 6, 2020)

1. Three PhD positions financed by the VSM (University of Vienna); **application deadline October 20**
For these positions (directions for) PhD projects have been proposed. Applications are only possible for specific projects from the list.
List of projects (in alphabetical order):

1. Stability of Word Maps, with Applications (Supervisor: Goulnara Arzhantseva)
2. Expander Graphs, with Applications (Supervisor: Goulnara Arzhantseva)
3. Optimal Control of Waves in Dead Water (Supervisors: Adrian Constantin, Otmar Scherzer)
4. Stable Blowup in the Whole Space for Wave Maps and Yang-Mills Models (Supervisor: Roland Donninger)
5. Grothendieck Polynomials and Alternating Sign Matrices (Supervisor: Ilse Fischer, Co-Supervisor: Anton Mellit)
6. Topics from the Langlands Program (Supervisors: Harald Grobner, Alberto Mínguez)
7. Low-rank Tensor Decompositions in Scientific Machine Learning (Supervisors: Vladimir Kazeev, Philipp Petersen)
8. Combinatorial Inequalities (Supervisor: Christian Krattenthaler)
9. Metric Geometry with a Focus on Lorentzian Length Spaces (Supervisors: Michael Kunzinger, Roland Steinbauer)
10. New Identities in Macdonald Theory (Supervisor: Anton Mellit, Co-Supervisor: Ilse Fischer)
11. Mathematical Modelling at Small and Large Scales of Cell Differentiation (Supervisors: Sara Merino Aceituno, Christian Schmeiser, Christa Bücker)
12. Legendrian Knots and Open Books (Supervisor: Vera Vértesi)
13. Rare Events – Probabilistic Laws from Deterministic Dynamics (Supervisor: Roland Zweimüller)

2. Infinite singular systems of functional equations in combinatorics (TU Wien, Supervisor: M. Drmota); **application deadline October 20**

3. Lattice Paths combinatorics and discrete harmonic functions (TU Wien, Supervisor: M. Drmota); **application deadline October 20**

4. Functional analysis of infinite bounded operators (University of Vienna, Supervisor: P. Giordano); **application deadline November 6**

5. Spectral theory and complex analysis (University of Vienna, Supervisor: A. Kostenko); **application deadline October 20**

6. Non-smooth space-time geometry (Up to two positions; University of Vienna, Supervisors: M. Kunzinger, R. Steinbauer); **application deadline November 6**

7. Discrete geometric structures motivated by applications and architecture (TU Wien, Supervisor: C. Müller); **application deadline November 6**

8. Isoperimetric Problems in Integral Geometry (TU Wien, Supervisor: F. Schuster); **application deadline October 8**

Positions added in early October – later deadlines:

9. Affine geometry on Lie groups and Lie-algebraic structures (University of Vienna, Supervisor: D. Burde); deadline for applications: **November 6**

10. Optimal control and analytical mechanics for generalized smooth functions (University of Vienna, Supervisor: P. Giordano); deadline for applications: **November 6**