



UNIVERSITÄT  
SALZBURG

# SALZBURG MATHEMATICS COLLOQUIUM

Winter 2026/27

László Erdős (ISTA)

## „Multi-resolvent local laws and applications“

October 8, 2026

### Abstract:

The resolvents of large random matrices, even very close to the imaginary axis, concentrate with a small fluctuation as the dimension increases. We extend this phenomenon to alternating products of resolvents and deterministic matrices using a new strategy consisting of an alternating tandem of two matrix flows.

We focus on the applications, including (i) the precise identification of the blow up rate of the solution to a large system of ODE, (ii) eigenstate thermalisation hypothesis in physics and statistics and (iii) decorrelation phenomena of eigenvectors.

Based upon joint works with Zhigang Bao, Giorgio Cipolloni, Joscha Henheik, Oleksii Kolupaiev, Yuanyuan Xu.

Thursday, **15:00-15:45**  
Hörsaal 414, 1. Stock