



Der Wissenschaftsfonds.



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## Einladung

zum Vortrag im Rahmen des **SFB Colloquiums** (Standort Linz), mit dem Titel

# Lattice points, volumes of projections, and o-minimality

VORTRAGENDER: **Martin Widmer**, Royal Holloway, University of London

DATUM: Donnerstag, 12. November 2015

ZEIT: 14:00 Uhr

ORT: Science Park 2, S2 219, JKU Linz

**Abstract:** Let  $\Lambda$  be a lattice in  $\mathbb{R}^n$ , and let  $Z \subseteq \mathbb{R}^{m+n}$  be a parameterised family of subsets  $Z_T$  of  $\mathbb{R}^n$ . We are interested in the cardinality  $|\Lambda \cap Z_T|$ . Using o-minimal structures from model theory we prove for fairly general families  $Z$  an estimate, which is essentially best possible. To this end we show that the volumes of the projections of  $Z_T$  to an arbitrary  $j$ -dimensional subspace are bounded in terms of the volumes of the projections to the  $j$ -dimensional coordinate spaces and the family  $Z$ , but independently of  $T$ . This is joint work with Fabrizio Barroero.

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Das **SFB Colloquium** wird vom **FWF Special Research Program (SFB) Quasi-Monte Carlo Methods: Theory and Application** unterstützt