

The logo for the Austrian Science Fund (FWF) consists of the letters 'FWF' in a bold, sans-serif font. The 'F' is grey, and the 'W' and 'F' are blue.

Der Wissenschaftsfonds.

The logo for Johannes Kepler University Linz (JKU) features the letters 'JKU' in a bold, black, sans-serif font. The 'J' and 'K' are connected, and the 'U' is separate.

JOHANNES KEPLER  
UNIVERSITÄT LINZ

## Einladung

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

# The L2 discrepancy of the irrational rotation

VORTRAGENDER: **Bence Borda**

DATUM: Donnerstag, 16. März 2017

ZEIT: 11:00 Uhr

ORT: Science Park 1, MT 226/1, JKU Linz

**Abstract:** The sequence  $kA \bmod 1$  where  $A$  is irrational is one of the simplest examples of a sequence of low discrepancy. Based on this sequence Davenport constructed a finite point set of  $2n$  points in the unit square the L2 discrepancy of which is of smallest possible order of magnitude constant times the square root of  $\log n$ . I was recently able to find the precise asymptotics of the L2 discrepancy of Davenport's construction for a wide class of irrational numbers  $A$ , including the constant factor. In the special case when  $A$  is a quadratic irrational, this constant factor in fact has surprising connections to the quadratic field  $Q(A)$ . In particular, when  $A$  is the golden ratio Davenport's construction has a smaller L2 discrepancy than any other construction of a finite point set in the unit square known to this date.

---

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