

# SALZBURG MATHEMATICS COLLOQUIUM

Winter 2019/2020

Ferenc Fodor (Szeged)

## „Stability of some geometric inequalities via measure transportation“

January 16, 2020

### Abstract:

When the equality case of an inequality is known, it is always an important problem to determine its behaviour close to the extremum. A stability version of an inequality often refers to a statement in which we estimate the distance of the considered geometric object from the equality case in terms of the deviation of the studied quantity from the extremum. In this talk we will show a method that was used to prove such statements for certain prominent inequalities, such as the reverse isoperimetric inequality for centrally symmetric convex bodies and the mean width inequality for convex bodies whose maximal volume inscribed ellipsoid is the unit ball. The arguments depend on the strengthening of Barthe's measure transportation proofs of the geometric Brascamp–Lieb and reverse Brascamp–Lieb inequalities for special classes of probability density functions. (Joint work with Károly J. Böröczky and Daniel Hug.)

Thursday, **15:00-15:45**

Hörsaal 414, 1. Stock