

# SALZBURG MATHEMATICS COLLOQUIUM

Summer 2025

Andrea Colesanti (Florence)

## „Around the isoperimetric inequality“

April 3, 2025

### Abstract:

The talk will start from the classical isoperimetric problem in the Euclidean space and its solution provided by the isoperimetric inequality. We will see some proofs of this inequality, relying on different ideas: a proof for the planar case due to Hurwitz and Lebesgue, the proof based on Steiner symmetrization and a third proof made possible by the Brunn-Minkowski inequality.

We will then move to the sphere, and we will see how to use the solution of the isoperimetric problem on the sphere to solve the same problem in Gauss space. We will conclude by describing a second way, based on Ehrhard symmetrization, to solve the isoperimetric problem in Gauss space and with an open problem.

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

Hörsaal 414, 1. Stock