

BERNOULLIS TAFELRUNDE

MATH STUDENTS AND PHDS SEMINAR

Monday 03.03.2025, 12:15 - 13:00
Seminarraum 05.002

GIACOMO COZZI

Università di Padova

Bernoulli Introduces Gradient Flows of Nonlocal Energies

ABSTRACT

The aim of this talk is to present the theory of gradient flows on metric space. Given a functional defined on a Hilbert space, its gradient flow is the curve minimizing the functional in the fastest way possible, namely, following the opposite direction of its gradient. Starting from the pioneristic work of De Giorgi, it became possible to give a meaning to gradient flows even in spaces where the definition of gradient is not natural (i.e., on spaces which are not Hilbert). An important application is the case of gradient flows defined on the space of probability measures endowed with the Wasserstein distance. Using this theory, we will discuss two examples in which the functionals to be minimized are nonlocal (namely, long range interaction) energies.