

BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

Monday, 6 November 2023, 12:15-13:00
Seminarraum 05.002, Spiegelgasse 5

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The optimal transport problem: equivalent formulations and regularizations

ABSTRACT

In the first part of the talk we will look at the optimal transport problem from three different approaches, analyzing some of their strengths, weaknesses and sketching the intuitions behind each one. More precisely, we will discuss the classical Monge–Kantorovich formulation, the Eulerian point of view given by the Benamou–Brenier formulation and the regularization given by congestion problems. We will see how such congestion problems are related to the Mean Field Games theory. In the second part of the talk, we will focus on the case of the regularization given by an entropic penalization. Assuming the initial and terminal measures to have densities, we prove that the optimal curve remains positive and locally bounded in time. We focus on the case that the transport problem is set on a compact Riemannian manifold with Ricci curvature bounded below.