



Einladung zum Oberseminar Wissenschaftliches Rechnen

Julius-Maximilians-Universität Würzburg
Lehrstuhl für Wissenschaftliches Rechnen IX

Prof. Marco Caponigro

Dipartimento di Matematica, Università di Roma "Tor Vergata"

Geometric control of the continuity equation

In this talk we consider the problem of transporting one probability measure into another through the flow of a driftless control-affine system.

Under suitable regularity conditions, controllability of the system by means of open-loop controls ensures the existence of time-varying feedback controls whose time-one flow realizes the optimal transport map for the quadratic cost.

The analysis connects the controllability of finite-dimensional systems with that of the associated continuity equation, providing a macroscopic description of evolving probability measures. These controllability problems arise naturally in the simultaneous control of large-scale multi-agent systems, where agent distributions evolve as controlled densities, or in Neural Ordinary Differential Equations, where control inputs correspond to parameters in continuous-depth models.

Ort: Raum 30.02.003 (Mathematik West, 2.Stock)

Zeit: Do. 18.06.2026, 10:00 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.
You are cordially invited to this lecture.

gez. Prof. Dr. Alfio Borzi
gez. Prof. Dr. Frank Werner