universität wien
Fakultät für Mathematik

Mathematisches Kolloquium

Mittwoch, 4. Dezember 2019
Sky Lounge

EINLADUNG

Jérôme Bolte
(Toulouse School of Economics)

„Convergence of gradient curves: Lojasiewicz inequalities, functional inequalities and optimal transport“

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Abstract:
This talk revolves around the issue of understanding the convergence of gradient curves in a Riemannian-like metric setting. Positive answers to this question impact many fields including PDE, optimal transport, real algebraic geometry, optimization and machine learning. I will mainly focus on optimal transport applications.
I will first explain, at a general level, the tight link existing between the finite length issue for gradient curves and geometric inequalities called Lojasiewicz inequalities. I will then show how this approach can be fruitful in optimal transport by evidencing transparent geometrical interpretations of some famous functional inequalities as log-Sobolev, Gagliardo-Nirenberg-Sobolev, Talagrand or Poincaré inequalities. This will in turn allow for an intuitive unified proof of several stabilization results as H-Boltzmann theorem or porous media equations.
If time allows, I will also give a simple geometric interpretation of Otto-Villani's theorem.

The talk is built upon results obtained with Blanchet, Daniilidis, Ley, Lewis, Mazet, Shiota.

15.45 Uhr: Kaffeejause

16.15 Uhr: Vortrag

vinum cum pane im Anschluss

Radu Ioan Bot
Roland Donninger
Christian Krattenthaler