PARIS
LODRON
UNIVERSITÄT
SALZBURG

SALZBURG MATHEMATICS COLLOQUIUM
Summer 2026

Aris Daniilidis (TU Wien)

„On the behavior of the derivative map“

April 30, 2026

Abstract:
We focus on the difference between differentiable versus strict differentiable locally Lipschitz functions from the view point of nonsmooth analysis: while in the latter class, all limiting Jacobians are singletons, we show that for some locally Lipschitz functions (which, in addition, are everywhere differentiable) the limiting Jacobian map contains all nonempty compact connected subsets of matrices.

In the particular case of real-valued functions, we obtain locally Lipschitz functions with surjective limiting and Clarke subdifferentias. Our concrete example-scheme will also reveal that the class of such pathological locally Lipschitz (and everywhere differentiable)functions is dense (for the topology of the uniform convergence) and spaceable (for the Lip-norm topology). A similar omnipresent pathology also prevails subdifferentially saturated functions.

Thursday, **15:00-15:45**
Hörsaal 414, 1. Stock

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