



universität
wien

Fakultät für Mathematik

Mathematisches Kolloquium

Mittwoch, 4. Dezember 2019

Sky Lounge

EINLADUNG

Aris Daniilidis

(University of Chile)

**„Detecting and controlling the size of critical values:
from Classical to Nonsmooth Analysis“**

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from Classical to Nonsmooth Analysis“**

Abstract:

In the beginning of the talk I will survey classical results concerning the shape and size of critical points/values from the optimization viewpoint. I will progressively move from smooth to Lipschitz continuous functions, where tools of nonsmooth analysis, such as the Clarke subdifferential, come into play. This brings us naturally to the notion of nonsmooth criticality.

I will first explain, at a general level, that structural assumptions on the function, such as semi-algebraicity, or being continuous selection of a family of smooth functions with a control on cardinality, will ensure powerful results on the size of generalized critical values. I will also discuss theoretical results on how to measure pathological situations, involving Baire-categorical arguments or purely algebraic tools.

If time allows, I will discuss on the efficiency of (nonsmooth) first-order methods to detect (generalized) critical points.

The talk is built upon results obtained with Barbet, Bolte, Dambrine, Drusviatskiy, Ley, Lewis, Mazet, Rifford, Shiota.

15.45 Uhr: Kaffeejause

16.15 Uhr: Vortrag

vinum cum pane im Anschluss

Radu Ioan Bot
Roland Donninger
Christian Krattenthaler