Fakultät für Mathematik
Oskar-Morgenstern-Platz 1
A-1090 Vienna
Austria

https://owos.univie.ac.at

ONE WORLD OPTIMIZATION SEMINAR

September 21st, 2020 @ 15:30 CEST (Central European Summer Time)

ADRIAN LEWIS

(ORIE Cornell)

Smoothness in Nonsmooth Optimization

Abstract. Fast black-box nonsmooth optimization, while theoretically out of reach in the worst case, has long been an intriguing goal in practice. Generic concrete nonsmooth objectives are "partly" smooth: their subdifferentials have locally smooth graphs with powerful constant-rank properties, often associated with hidden structure in the objective. One typical example is the proximal mapping for the matrix numerical radius, whose output is surprisingly often a "disk" matrix. Motivated by this expectation of partial smoothness, this talk describes a Newtonian black-box algorithm for general nonsmooth optimization. Local convergence is provably superlinear on a representative class of objectives, and early numerical experience is promising more generally.

Joint work with Dima Drusvyatskiy, XY Han, Alex Ioffe, Jingwei Liang, Michael Overton, Tonghua Tian, Calvin Wylie

The link of the zoom-room of the meeting and the corresponding password will be announced the day before the talk on the mailing list of the seminar, to which one can subscribe on https://owos.univie.ac.at.