

On New Approaches for Nonsmooth Optimization

Andrea Walther

Humboldt Universität zu Berlin

`andrea.walther@math.hu-berlin.de`

Numerous optimization tasks exhibit a nonsmooth behavior. In contrast to the classical smooth case, where optimality conditions are well studied and understood, criteria to determine whether a given point is optimal or even just stationary are still the subject of ongoing research for nonsmooth functions to be minimized. In this presentation, first we discuss new optimality conditions for a large class of piecewise smooth functions using so-called kink qualifications. Here, also the computational complexity to verify the new criteria is covered. Next, we present optimization algorithms resulting from these findings. Finally, we present some applications that fit into the considered problem class.