

TITLE: Calmness and Hölder Calmness of Minimizing Sets

ABSTRACT: For multivalued mappings, the notion of q -order calmness is used for a special kind of upper Lipschitz ($q=1$) or upper Hölder ($q < 1$) continuity. We will present sufficient conditions for q -order calmness of the argmin mapping of a general parametric optimization problem in finite dimensions. It turns out that relatively weak stability assumptions for the constraint set mapping and a suitable growth condition or, alternatively, q -order calmness of some constrained level set mapping will guarantee calm or Hölder calm behavior of minimizers. This extends results known from the literature for particular settings. A main purpose of our presentation is to discuss verifiable conditions which specialize our general results to concrete models of perturbed optimization, including standard nonlinear programs, convex semi-infinite problems and mathematical programs with disjunctive constraints. The results presented here were obtained together with Bernd Kummer (see, e.g., D. Klatte, B. Kummer, On Hölder calmness of minimizing sets, Optimization, published online 24 April 2021).