

LIPSCHITZ AND HOELDER STABILITY OF STATIONARY SOLUTIONS

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ABSTRACT. In this talk, the stationary solution map of a perturbed nonlinear program or variational condition is studied with respect to several stability concepts of Lipschitz or Hoelder type. One focus is on sufficient conditions (or even characterizations) which are explicitly given in terms of the original problem data. We relate classical results with more recent ones by discussing potentials, differences and limits of the known conditions. For example, it turns out that even for solutions to convex polynomial programs strong Lipschitz stability at some reference point P does not only depend on the derivatives, up to some fixed order, of the problem functions at P . Another subject of the talk concerns the discussion of conditions for upper Lipschitz or Hoelder stability. The talk is based on the papers Klatte and Kummer (SIAM J. Optim., Vol. 16, 2005), Klatte, Kruger and Kummer (J. Convex Anal., Vol. 19, 2012) and Gfrerer and Klatte (Math. Program., Ser. A, published online May 2015).