

IX BRAZILIAN WORKSHOP ON
CONTINUOUS OPTIMIZATION

(in honor of Professor Clovis Gonzaga)

Michel Théra

University of Limoges & Federation University-Australia

Estimate for fixed points of composition of multifunctions
and application to the global version of the
Lusternik-Graves Theorem

Abstract. In this talk that is based on a joint work with S. Adly and A. Dontchev, we present conditions under which the distance from a point x to the set of fixed points of the composition of set-valued mappings F and G is bounded by a constant times the smallest distance between the sets $F^{-1}(x)$ and $G^{-1}(x)$. This result sharpens an earlier result by Lim regarding the Hausdorff distance estimate between the fixed points of two set-valued mappings. It allows also to give a global version of the Lyusternik-Graves theorem and to derive finally one sided-Lipschitz properties of the solution mapping of parametric differential inclusions.

REFERENCES

S. ADLY, A. DONTCHEV, M. THÉRA, On one-sided Lipschitz stability of set-valued contractions, submitted to *Numerical Functional Analysis and Optimization*.