

1025-49-66

**Bao Quang Truong\*** (aq8589@wayne.edu), 656 W. Kirby, Room 1104 Faculty/Administration Bldg, Detroit, MI 48202, and **Boris Mordukhovich** (boris@math.wayne.edu), 656 W. Kirby, 1237 Faculty/Administration Bldg, Detroit, MI 48202. *Necessary and sufficient conditions of global and local weak Pareto Maxima in set-valued optimization.*

This talk focus on epiderivative necessary and sufficient conditions of global and local weak Pareto maxima to set-valued optimization problems with geometric constraints:

$$\begin{array}{ll} \text{maximize} & F(x) \\ \text{s.t.} & x \in \Omega, \end{array}$$

where  $F : X \rightrightarrows Z$ ,  $\Omega \subset X$  and “*maximization*” is understood with respect to a closed, convex ordering cone  $K$  of  $Z$ . They are established by using modern tools of variational analysis and generalized differentiation, particularly *the extremal principle* and *smooth variational descriptions of Fréchet normals* under certain standard assumptions. Refined versions of necessary and sufficient conditions are considered for single-valued problems with finitely many objectives. Then we illustrate the usage of these conditions by numerous examples.

(Received January 12, 2007)