1077-49-221 **Boris Mordukhovich** and **Nghia Tran*** (ttannghia@wayne.edu), 667 W Hancock, Apt 309, Detroit, MI 48201. *Subdifferentials of Supremum Lipschitzian Functions and Its Applications to Nonsmooth Semi-infinite and Infinite Programs.*

The paper concerns the study of subdifferentials of a function which is the supremum of an arbitrary family of uniformly Lipschitzian functions in Asplund spaces. As a consequence we get involved first-order optimality conditions for nonsmooth optimization problems of the so-called infinite programming that are generally defined on infinite-dimensional spaces of decision variables and contain infinitely many of inequality constraints with arbitrary index sets. These problems reduce to semi-infinite programs when the spaces of decision variables are finite-dimensional. We also extend the classical Mangasarian-Fromovitz constraint qualification and introduce some new types of closedness conditions to such semi-infinite and infinite programs. (Received August 14, 2011)