© 2007 Heldermann Verlag Journal of Convex Analysis 14 (2007) 119–136

## P. Bousquet

Institut Camille Jordan, Université Claude Bernard Lyon 1, 43 Bldv. du 11 Novembre 1918, 69622 Villeurbanne, France pierre.bousquet@igd.univ-lyon1.fr

## On the Lower Bounded Slope Condition

Let  $\Omega$  be a bounded open convex set in  $\mathbb{R}^n$  and let  $\phi: \Gamma := \partial \Omega \to \mathbb{R}$  be a function defined on its boundary. The *lower bounded slope condition* (on  $\phi$ ) is a hypothesis recently introduced by F. Clarke [Ann. Scuola Norm. Sup. Pisa, in print], who has shown its relevance to regularity theory in the calculus of variations. It corresponds to a weaker version of the traditional *bounded slope condition*, which also appears in the theory of elliptic differential equations. In this paper, we study the regularity properties of these functions and give intrinsic characterizations of them. Semiconvexity turns out to be a central tool in the proofs.