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RELATIVELY MAS-COLELL PROPERNESS CONDITION AND QUASI RELATIVE INTERIOR

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We strength the original notion of "properness" due to Mas-Colell and show its suitability for considering quasi relative interior of convex sets. This is employed to characterize when the Fenchel subdifferential of a (possibly nonconvex) function at a given point belonging to the quasi relative interior of the convex hull of its domain, is nonempty. As a consequence, we propose sufficient conditions related to quasiconvexity for the nonemptiness of such a subdifferential.

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