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**Kuang Bai\*** (kuangbai@uvic.ca), Victoria, Canada. *On directional pseudo/quasi-normality and directional enhanced KKT conditions.*

In this paper we mainly study the metric subregularity of a set-valued map which is the sum of a single-valued Lipschitz continuous mapping and a closed subset. First we derive a sufficient condition for metric subregularity called quasi-first order sufficient condition for metric subregularity (FOSCMS) that is weaker than the FOSCMS recently introduced by Gfrerer. Then we introduce a directional version of the pseudo-normality and quasi-normality which is weaker than the classical pseudo-normality and quasi-normality respectively. The directional quasi-normality are stronger than the quasi-FOSCMS but easier to verify. An example is used to illustrate that the directional pseudo-normality can be weaker than both the FOSCMS and the quasi-normality. For the class of set-valued maps where the Lipschitz mapping is linear and the closed set is the union of finitely many convex polyhedral sets, we show that the directional pseudo-normality holds automatically at each point of the graph. Finally we apply our results to non-smooth optimization problems. Under directional pseudo/quasi-normality, we show that any local minimizer must satisfy the directional enhanced KKT condition which is a stronger optimality condition than the classical enhanced KKT condition. (Received February 05, 2018)