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Boris Mordukhovich, Ebrahim Sarabi and Hong Do* (fq0828@wayne.edu), 641 Prentis St, apt 207, Detroit, MI 48201. *Critical multipliers via second-order generalized differentiation of a subclass of piecewise linear-quadratic functions.* Preliminary report.

It has been well recognized that critical multipliers, the notion of which developed by Izmailov and Solodov for classical Karush-Kuhn-Tucker (KKT) systems, are largely responsible for slow convergence of major primal-dual algorithms of optimization. Recently their notion has been extended to a general framework of constrained optimization including composite optimization, minimax problems, etc. This talk concerns the critical multipliers for variational systems of a major subclass of piecewise linear-quadratic functions. Implementing a comprehensive second-order study of this class, we obtain complete characterizations of critical and noncritical multipliers via the problem data. It is shown that noncriticality is equivalent to a certain calmness property of a perturbed variational system. These results can be applied to study the vanishment of critical multipliers under the fulfilment of the full stability of local minimizers in problems of composite optimization. (Received September 25, 2018)