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Bao Q Truong* (btruong@nmu.edu), 1401 Presque Isle Ave, Marquette, MI 49855. *A blended proof of the vectorial Ekeland variational principle.*

This talk discusses a blended proof of a vectorial Ekeland variational principle. It bases on the nonlinear scalarization functional in Tammer (Gerth) and Weidner's nonconvex separation theorem widely used in the scalarization approach (Gerth (Tammer), C., Weidner, P.: Nonconvex separation theorems and some applications in vector optimization. J. Optim. Theory Appl. 67 (1990) 297–320)) and on an iterative scheme in (Bao T.Q., Mordukhovich B.S.: Relative Pareto minimizers for multiobjective problems: existence and optimality conditions. Math. Progr. 122 (2010) 301–347) developed in the variational approach. It is important to emphasize that this new proof works well even in the case where the ordering cone of the partial ordering image space has an empty interior. Illustrative examples are provided. (Received July 29, 2015)