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*A perspective on piecewise linear convex under-estimators.*

We study a well-known MINLO (mixed-integer nonlinear optimization) formulation of the disjunction  $x \in \{0\} \cup [l, u]$ , where  $z$  is a binary indicator of  $x \in [l, u]$ , and  $y$  “captures”  $x^p$ , for  $p > 1$ . This model is useful when activities have operating ranges, we pay a fixed cost for carrying out each activity, and costs on the levels of activities are strictly convex. The ‘perspective reformulation’ is a well-known method for tightening the convex relaxation of the obvious MINLO formulation. Using volume as a measure to compare convex bodies, we investigate optimal placement of a fixed number of linearization points for building a best piecewise-linear convex under-estimator (in the context of the perspective reformulation). (Received September 06, 2019)