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Bézier-Semidefinite Relaxations of nonconvex quadratic programs over a simplex

Some relaxations of nonconvex quadratic programs over a simplex are proposed. The approach is based on quadratic approximations of the convex envelope using Bézier methods and semidefinite programming which results in a convex quadratic program (QP). The optimal value of QP is a lower bound for the original problem. A minimizer of QP is an estimation of a global minimizer of the original problem.