

# Distinguishing a global minimizer from local minimizers of quadratic minimization with mixed variables

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## Abstract

We provide simple necessary, and sufficient conditions for a local minimizer to be a global minimizer of quadratic functions with mixed variables. We fully distinguish global minimizers from local minimizers in the case when the quadratic function is a sum of squares by providing a necessary and sufficient global optimality condition. We discuss examples to illustrate the significance of our conditions for identifying a global minimizer among local minimizers. Finally we apply our criteria for identifying global minimizers of a class of fractional programming problems.

## Author keywords

Global optimality conditions; Mixed va; Quadratic programs; Weighted least squares