

A note on sufficient global optimality conditions for fixed charge quadratic programs

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Abstract

In this work we establish conditions for a feasible point to be a global minimizer of a fixed charge quadratic model program. This program has a wide variety of classic applications, for instance, in facility location, scheduling and portfolio selection. However, the existence of the fixed charges in its objective function has hindered the development of extensive theory for its global solutions. We derive sufficient conditions for global optimality by way of underestimating the Lagrangian using a weighted sum of squares. We present a numerical example to illustrate our optimality conditions.

Author keywords

Fixed charge variables; Global optimization; Quadratic programs; Sufficient optimality conditions

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