

## ON THE DECREASE OF A QUADRATIC FUNCTION ALONG THE PROJECTED-GRADIENT PATH\*

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**Abstract.** The Euclidean gradient projection is an efficient tool for the expansion of an active set in the active-set-based algorithms for the solution of bound-constrained quadratic programming problems. In this paper we examine the decrease of the convex cost function along the projected-gradient path and extend the earlier estimate given by Joachim Schöberl. The result is an important ingredient in the development of optimal algorithms for the solution of convex quadratic programming problems.

**Key words.** Bound-constrained quadratic programming, Euclidean gradient projection, rate of convergence.

**AMS subject classifications.** 65K05, 90C20, 49M10.

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