

Toint, Ph. L.**Global convergence of a class of trust-region methods for nonconvex minimization in Hilbert space.** (English) [Zbl 0698.65043](#)

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Summary: A class of trust-region methods for solving constrained optimization problems in Hilbert space is described. The algorithms of the class use, at every iteration, a local model of the objective, on which very weak conditions are imposed. Global convergence results are then derived for the class without assuming convexity of the objective functional. It is also shown that convergence of the classical projected-gradient method can be viewed as a special case of this theory. An example is finally given that points out some difficulties appearing when using active-set strategies in infinite-dimensional spaces.

MSC:**65K05** Numerical mathematical programming methods**90C48** Programming in abstract spaces**90C30** Nonlinear programmingCited in **57** Documents**Keywords:**

nonconvex minimization; trust-region methods; constrained optimization; Hilbert space; algorithms; Global convergence; projected-gradient method

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