

Vanderbei, Robert J.; Shanno, David F.

An interior-point algorithm for nonconvex nonlinear programming. (English) Zbl 1040.90564
Comput. Optim. Appl. 13, No. 1-3, 231-252 (1999).

Summary: The paper describes an interior-point algorithm for nonconvex nonlinear programming which is a direct extension of interior-point methods for linear and quadratic programming. Major modifications include a merit function and an altered search direction to ensure that a descent direction for the merit function is obtained. Preliminary numerical testing indicates that the method is robust. Further, numerical comparisons with MINOS and LANCELOT show that the method is efficient, and has the promise of greatly reducing solution times on at least some classes of models.

MSC:

[90C51](#) Interior-point methods
[90C30](#) Nonlinear programming
[90C55](#) Methods of successive quadratic programming type

Cited in **102** Documents

Keywords:

[nonlinear programming](#); [interior-point methods](#); [nonconvex optimization](#)

Software:

[Benchmarks for Optimization Software](#); [GAMS](#); [LANCELOT](#); [LOQO](#); [MINOS](#)

Full Text: [DOI](#)