

Multi-Purpose Optimization with flexible Simulated-Annealing

by Kai Husmann, Alexander Lange (and Elmar Spiegel)

Abstract An abstract of less than 150 words.

Introduction

As early optimization methods occurred with the first digital computers (Corana et al., 1987), nowadays several optimization methods for various purposes are available (Wegener, 2005). According to the definition by Pronzato et al. (1984), optimization is the finding of an optimum with respect to one or more parameters and optional restrictions. Optimization procedures can be separated into two groups depending on their field of application. In case the loss function shows relatively simple responses, long-established and well-known exact optimization methods, e. g. the Linear Simplex-Method (Dantzig et al., 1959), are usually the most efficient way to solve optimization problems. If all assumptions on loss and model restrictions are met, these methods will obligatorily find the exact solution. If, however, one of the assumptions (e. g. linearity or unimodality) is violated, more general optimization procedures must be applied to solve problems properly.

This section may contain a figure such as Figure 1.



Figure 1: The logo of R.

Another section

There will likely be several sections, perhaps including code snippets, such as:

```
x <- 1:10  
result <- myFunction(x)
```

Summary

This file is only a basic article template. For full details of *The R Journal* style and information on how to prepare your article for submission, see the [Instructions for Authors](#).

Bibliography

- A. Corana, M. Marchesi, C. Martini, and S. Ridella. Minimizing multimodal functions of continuous variables with the “simulated annealing” algorithm. *ACM Trans. Math. Softw.*, 13(3):262–280, 1987. [p1]
- G. B. Dantzig, D. R. Fulkerson, and S. M. Johnson. On a linear-programming, combinatorial approach to the traveling-salesman problem. *Operations Research*, 7(1):58–66, 1959. [p1]
- J. Nelder and R. Mead. A simplex method for function minimization. *Computer Journal*, 7(4):308–313, 1965. [p]
- L. Pronzato, E. Walter, A. Venot, and J.-F. Lebruchec. A general-purpose global optimizer: Implimentation and applications. *Mathematics and Computers in Simulation*, 26(5):412–422, 1984. ISSN 03784754. doi: 10.1016/0378-4754(84)90105-8. [p1]

I. Wegener. Simulated annealing beats metropolis in combinatorial optimization. In *International Colloquium on Automata, Languages, and Programming*, pages 589–601. Springer, 2005. [p1]

Author One
Affiliation
Address
Country
author1@work

Author Two
Affiliation
Address
Country
author2@work

Author Three
Affiliation
Address
Country
author3@work