DERIVATIVE-FREE OPTIMIZATION WITH TOF-SNOBFIT

Yash Puranik
Nick Sahinidis

The Optimization Firm, LLC
6401 Penn Ave
Suite 300
Pittsburgh, PA 15206, USA

ABSTRACT

The Optimization Firm will present its new TOF-SNOBFIT software, a high-performance Fortran implementation of the SNOBFIT algorithm by Huyer and Neumaier (2008). The software makes it possible to solve box-constrained global optimization problems using only function values from simulations or experiments. This talk will describe the main algorithmic features of TOF-SNOBFIT, illustrate its use, and present extensive computational results with hundreds of benchmarks and various applications. The computational experiments were designed to measure and analyze CPU time requirements, number of calls to the simulator, and the effect of starting point and number of iterations on solution quality.

REFERENCES

Huyer, W. and A. Neumaier. 2008. "SNOBFIT -- Stable Noisy Optimization by Branch and Fit". *ACM Transactions on Mathematical Software* 35(2):9.