

Quantile-Based Stochastic Optimization Using Modified Stochastic Nelder-Mead Simplex Method

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Abstract

The risk management has received considerable attention because it allows the downside of decisions to be minimized. Quantile is one of the most popular measure used for performing risk management. We present a new Quantile-based approach that is called Stochastic Nelder-Mead Simplex method for Quantile (SNM-Q) can effectively control the risk compared to the traditional mean-based approach. SNM-Q is a newly-developed direct-search method for Quantile-based stochastic optimization problems. Because SNM-Q does not require gradient information and is proved to have nice convergence property, it can be applicable to many practical problems. Numerical experiments show that its efficiency is satisfactory and is worth of further investigation.

Keywords

Stochastic Nelder-Mead simplex method, quantile, direct-search method

Biography

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