Value-at-Risk (VaR) is an integral part of contemporary financial regulations. Therefore, the measurement of VaR and the design of VaR optimal portfolios are highly relevant problems for financial institutions. This paper treats a VaR constrained Markowitz style portfolio selection problem when the distribution of returns of the considered assets are given in the form of finitely many scenarios. The problem is a non-convex stochastic optimization problem and can be reformulated as a difference of convex (D.C.) program. We apply the difference of convex algorithm (DCA) to solve the problem. Numerical results comparing the solutions found by the DCA to the respective global optima for relatively small problems as well as numerical studies for large real-life problems are discussed.

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