

The thesis presents four methods for scenario generating leading to the resulting discrete probability distribution that replicates given values of the moments.

The first method uses heuristic algorithm, the second method generates by symmetrically distributing values around the mean value, the third one is based on solving the system of nonlinear equations and finally the last method is based on goal programming.

Next section describes the nature of problems solved by the goal programming. It also details possible ways of parameter specification to allow control of the computational complexity.

In the last part of the thesis the results of several suitable methods for chosen types of problem are compared.