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**SAMPLE AVERAGE APPROXIMATION IN THE TWO-STAGE STOCHASTIC  
LINEAR PROGRAMMING PROBLEM WITH QUANTILE CRITERION****S. V. Ivanov, A. I. Kibzun**

The two-stage problem of stochastic linear programming with quantile criterion is considered. In this problem, the first stage strategy is deterministic and the second stage strategy is chosen when a realization of the random parameters is known. The properties of the problem are studied, a theorem on the existence of its solution is proved, and a sample average approximation of the problem is constructed. The sample average approximation is reduced to a mixed integer linear programming problem, and a theorem on their equivalence is proved. A procedure for finding an optimal solution of the approximation problem is suggested. A theorem on the convergence of discrete approximations with respect to the value of the objective function and to the optimization strategy is given. We also consider some cases not covered in the theorem.

Keywords: stochastic programming, quantile criterion, sample average approximation, mixed integer linear programming.

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