

Misyura V. V. (Rostov-on-Don, Russia) Application of online teaching methods for predicting the flow of events in stochastic models with uncertain parameters.

The report based on the work [1] is about online learning technology for forecasting the flow of random events in stochastic models with uncertain drift and volatility in discrete time. In this work an approach is used where instead of one model a set of possible models is considered as experts or decision rules used in pattern recognition. Experts make predictions of the future outcome. The predictive algorithm observes the estimates and evaluates their effectiveness. The predictive algorithm is based on the problems of linear and non-linear programming. The goal is to minimize the difference between the loss of the algorithm and the loss of the best mixed model that has minimum amount of loss. The presented approach to the forecast of a random event in stochastic models with indeterminate parameters has shown its effectiveness in a model example. The computational experiment was carried out on the basis of models with indeterminate drifts and volatility, which was used as an alternative to the Black-Scholes model [2]. Results of predicting the effectiveness and effectiveness of the proposed method are shown.

REFERENCES

1. *Belyavsky G., Misyura V.* A random event forecast in stochastic models with undefined parameters. — Far East Journal of Mathematical Sciences (FJMS), 2018, v. 103, №1, p. 159 - 170
2. *Shiryayev A.N.* Fundamentals of stochastic financial mathematics. Data. Models. M.: FASIS, 1998, P. 489.