Numerical Solution of a Nonlinear Evolution Equation for the Risk Preference

N. Ishimura, M. N. Koleva and L. G. Vulkov

A singular nonlinear partial differential equation (PDE), which describes the evolution of the risk preference in the optimal investment problem under the random risk process was derived by the first author in previous publications. The quantity is related to the Arrow-Pratt coefficient of relative risk aversion with respect to the optimal value function. The present paper deals with the construction of a finite difference scheme and the numerical analysis of its solution for the above mention PDE.