1135-60-492   **Arash Fahim***, 1017 Academic Way, 208 LOV, Tallahassee, FL 32306, and **Wan-Yu Tsai**, 1017 Academic Way, 208 LOV, Tallahassee, FL 32306. *A Monte Carlo scheme for a singular control problem.* Preliminary report.

We provide a numerical solution of the nonlinear parabolic double obstacle problem arising from a finite horizon portfolio selection with proportional transaction costs. The problem is mainly governed by a time-dependent Hamilton-Jacobi-Bellman equation with gradient constraints due to the singularity of the control. We propose a numerical method which is composed of Monte Carlo simulation to mitigate the curse of dimensionality and finite difference method to make te fine approximation of the free boundary. Numerical results illustrate behaviors of the optimal trading strategies and also satisfy all qualitative properties from theoretical results. (Received September 06, 2017)