NUMERICAL APPROXIMATION IN SPACE OF BLACK-SHOLE'S OPTION PRICING MODEL WITH VOLATILE PORTFOLIO RISK MEASURE

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Abstract

We discretize in space the Black-Sholes option pricing model that incorporates transaction cost and volatile portfolio risk measure, with the use of finite difference methods. We set a discrete framework; by showing that it is a particular case of the general framework. We deduce an existence and uniqueness result for the solution of the discretized problem.

Keywords and phrases: Cauchy problem, Sobolev space, non linear black-Scholes equation, transaction cost, portfolio risk, finite difference methods. Received March 31, 2015

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