An unconditionally stable explicit finite difference scheme for nonlinear European option pricing problems

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Abstract

This talk deals with the numerical solution of two nonlinear Black-Scholes equations, modelling the replication of contingent claims in illiquid markets. A monotone unconditionally stable explicit finite difference scheme, ensuring positive numerical solution and avoiding unstable oscillations, is proposed. Consistency and convergence of the scheme are studied. Numerical experiments validate these properties of the scheme.

References