Chapter 5 Finite Difference Methods York University

CRUZ LACEY

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“rjlfdm” 2007/6/1 page 14 ✐ ✐ ✐ ✐ ✐ ✐ ✐ ✐ 14 Chapter 2. Steady States and Boundary Value Problems theory of this equation is familiar to the reader. See standard PDE books such as [55] for a derivation and more introduction.

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Chapter 5. Finite difference methods for partial differential equations. Option pricing problems can typically be represented as a partial differential equation (PDE) subject to boundary conditions, see for example the Black/Scholes PDE in Section 4.2.1 or the option pricing PDE in the presence of stochastic volatility in Section 6.3.. The idea behind finite difference methods is to approximate the partial derivatives in the PDE by a difference quotient, e.g.

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5 Finite Differences and Interpolation. Finite differences play a key role in the solution of differential equations and in the formulation of interpolating polynomials. The interpolation is the art of reading between the tabular values. Also the interpolation formulae are used to derive formulae for numerical differentiation and integration.

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How to solve any PDE using finite difference method
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