A POLICY ITERATION ALGORITHM FOR PRICING AN AMERICAN PUT

Athens University of Economics and Business
Nikos Barakitis
joint work with E. Mageirou and P. Vassalos

Scope: Develop numerical method for pricing American Put options.

The method at one glance:

- Start from any boundary $b$
- Solve the Black Scholes equation with that boundary condition
- At time $t$ update the boundary via the rule
  \[ b_{\text{new}}(t) = \arg\max_S[K - S - V(S, t)] \]
- Until convergence

Under reasonable assumptions the algorithm converges quadratically to the optimal boundary