

STANFORD UNIVERSITY  
DEPARTMENT OF STATISTICS  
SPECIAL DEPARTMENTAL SEMINAR

4:15 p.m., Friday, February 18, 2000  
Sequoia Hall Rm. 200

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**A Barrier Option of American Type**

We obtain close-form expressions for the prices and optimal hedging strategies of American put options in the presence of an "up-and-out" barrier, both with and without constraints on the short-selling of stock. The constrained case leads to an interesting stochastic optimization problem of mixed optimal stopping/singular control type; this is reduced to a variational inequality, which is then solved explicitly.