A Level Set Approach to Optimal Stopping Time in American Options.

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Abstract

In this work we analyze the inverse problem related to the determination of the *stopping time* in an American put option price model in a finite horizon. Given a set of American put options we propose a level set method that obtains a stable approximated solution that identifies the continuation set C and the stopping set D.

Regularizing properties of the level set approach proposed are presented and open questions are in the applicability of the level set framework to the stopping time are formulated.

Key words: Stopping time, American put options, level set regularization.

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