國 立 東 華 大 學 應 用 數 學 系

專 題 演 講

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講　題：A Forward Monte Carlo Method for American Options Pricing

時　間：101 年 11 月 16 日(星期五)　15:20-16:50

地　點：理學院A324會議室

摘　要

This study proposes a forward Monte Carlo method for the pricing of American options. The main advantage of this method is that it does not use backward induction as required by other methods. Instead, the proposed approach relies on a wise determination about whether a simulated stock price has entered the exercise region. The validity of the proposed method is supported by the mathematical proofs for the vanilla cases. With some adaption, it is shown that this forward method can be extended to price other American style options such as chooser and exchange options. This study demonstrates the effectiveness of the proposed approach using a series of numerical examples, revealing significant improvements in numerical efficiency and accuracy in contrast with the standard regressionbased method of Longstaff and Schwartz (2001).

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