

A new integral equation formulation for American put options

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In this talk, a completely new integral equation for the price of an American put option as well as its optimal exercise price is presented. Compared to existing integral equations for pricing American options, the new integral formulation has two distinguishable advantages; i) it is in a form of one-dimensional integral, and ii) it is in a form that is free from any discontinuity and singularities associated with the optimal exercise boundary at the expiry time. These rather unique features have led to a significant enhancement of the computational accuracy and efficiency as shown through some examples.

¹ Other co-authors of the *Quantitative Finance* paper, based on which this presentation is prepared, are Xin-Jiang HE and Xiao-Ping LU. (<http://www.tandfonline.com/eprint/De3iwdd3krthk7qe17HD/full>)