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Dejun Xie* (dxie@math.udel.edu), Department of Mathematics, University of Delaware,
Newark, DE 19716. *A PDE Approximation Approach to the Valuation of American Put Option.*

Consider the American put option where the holder has the choice to sell a stock at a preset price K at any time when the contract is effect. Several integral representations of the option value are provided, then a PDE approximation method is applied to find an exact near expiry approximation of the optimal early exercise boundary from the holder's point of view. Our formula is compared with both an existing result and the true numerical solution. (Received September 24, 2008)