

Greeks computation by means of RBF-PU methods

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Multiple methods have been extended to compute the price of a certain financial derivative: Finite difference methods, Monte Carlo, Multinomial trees. Recently, radial basis functions (RBF) methods have been proposed to efficiently solve the Black-Scholes PDE. Our aim is to show these methods, coupled with the Partition of Unity (PU) localisation technique, can be extended to compute the Greeks, i.e. the derivatives of the product's price with respect to its inputs. We derive the RBF-PU expressions in the classic Black-Scholes framework and compare the results with the most common technique, i.e. FDM. We conclude that RBF-PUM provides a smoother solution and a more efficient computation.

References

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