Application of Radial Basis Functions in Financial Mathematics

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Abstract Application of Radial Basis Functions in Financial Mathematics Shima mizani khames In this research, the radial basis functions method that is a meshless method for interpolation and solving partial differential equations, is introduced and some of their properties are investigated. After presenting the modeling and derivation of differential equations for some financial models, the method of implementing the radial basis functions method is discussed to solve the differential equations obtained the financial models. Also, the stability of the method for solving the discussed equations is investigated. Examples are provided to demonstrate the ability and efficiency of the method and in the calculation the Maple software has been used. Keywords : Interpolation, Radial Basis Functions, Black-Scholes equation, Call option, Put option, Stability.

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