

Abstract

In this paper, we consider moment properties for a class of quadratic *adaptive* fuzzy numbers defined in Dubois and Prade [D. Dubois, H. Prade, Fuzzy Sets and Systems: Theory and Applications, Academic Press, New York, 1980]. The corresponding moments of Trapezoidal Fuzzy Numbers (Tr.F.N's) and Triangular Fuzzy Numbers (T.F.N's) turn out to be special cases of the adaptive fuzzy number [S. Bodjanova, Median value and median interval of a fuzzy number, Information Sciences 172 (2005) 73–89]. A numerical example is presented based on the Black–Scholes option pricing formula with quadratic adaptive fuzzy numbers for the characteristics such as volatility parameter, interest rate and stock price. Our approach hinges on a characterization of imprecision by means of fuzzy set theory.

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