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THE NUMERICAL SOLUTIONS OF MULTIPLE INTEGRALS BASED ON HAAR WAVELET, BLOCK-PULSE FUNCTION, CHEBYSHEV WAVELET AND SINC FUNCTION

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ABSTRACT

In this paper, present computational methods for solving numerical multiple integrals with constants and variables limits of integrations which are based on Haar wavelet, Block-pulse function, Chebyshev wavelet and Sinc-function methods. This approach is the generalization and improvement of these methods and compared with Gauss Legendre quadrature methods. The main advantages of the generalized method are its more efficient and simple applicability than the previous methods. An absolute and relative errors are estimated of multiple integrations are considered up to three dimensions. Finally, we also give some numerical examples to compare with existing methods and the benefits of proposed methods have to find their computation efficiency.

KEYWORDS: *Multiple Integral, Gauss Legendre Quadrature Method, Haar Wavelets, Block-Pulse Functions, Chebyshev Wavelet, Sinc Functions*