

# A COMPARISON OF HYBRID FUNCTIONS BASED ALGORITHMS FOR COMPUTATION OF FOURIER BESSEL TRANSFORMS

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In this paper a new numerical method, based on hybrid of Block-pulse and Chebyshev polynomials for numerical evaluation of integer and fractional order Fourier Bessel (Hankel) transform is presented. Hybrid of Block-pulse and Chebyshev polynomials are used as a basis to expand a part of the integrand,  $rf(r)$ , appearing in the Hankel transform integral. Thus transforming the integral into a Fourier-Bessel series and truncating it, an efficient algorithm is obtained for the numerical evaluations of the Fourier Bessel (Hankel) transforms of order  $\nu > -1$ . The proposed method is quite accurate and stable, as compare to the existing algorithm based on hybrid of block-pulse and Legendre polynomials.