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Numerical Solutions of Fredholm Integral Equations by B-Spline Wavelet Method

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Abstract : In this paper, we apply minimalistically upheld linear semi-orthogonal B-spline wavelets, exceptionally developed for the limited interim to rough the obscure function present in the integral equations. Semi-orthogonal wavelets utilizing B-spline uniquely developed for the limited interim and these wavelets can be spoken to in a shut frame. This gives a minimized help. Semi-orthogonal wavelets frame the premise in the space $L^2(R)$. Utilizing this premise, an arbitrary function in $L^2(R)$ can be communicated as the wavelet arrangement. For the limited interim, the wavelet arrangement cannot be totally introduced by utilizing this premise. This is on the grounds that backings of some premise are truncated at the left or right end purposes of the interim. Subsequently, an uncommon premise must be brought into the wavelet development on the limited interim. These functions are alluded to as the limit scaling functions and limit wavelet functions. B-spline wavelet method has been connected to fathom linear and nonlinear integral equations and their systems. The above method diminishes the integral equations to systems of algebraic equations and afterward these systems can be illuminated by any standard numerical methods. Here, we have connected Newton's method with suitable starting speculation for solving these systems.

Keywords : semi-orthogonal, wavelet arrangement, integral equations, wavelet development
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