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Collocation method for solving Fredholm integral equation of the first kind using Shannon wavelet system

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Abstract

Wavelet-collocation approach for numerical solution of linear Fredholm integral equation of the first kind with specific kernels arising in electromagnetics problems is presented. We implement the method in two ways; using Shannon scaling functions alone, and using Shannon scaling functions together with Shannon wavelet functions. Its computational efficiency is compared with that of collocation method using Haar scaling functions.

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