New construction of wavelets base on floor function.

ABSTRACT

In this paper, the properties of the floor function has been used to find a function which is one on the interval [0, 1) and is zero elsewhere. The suitable dilation and translation parameters lead us to get similar function corresponding to the interval [a,b)[a,b). These functions and their combinations enable us to represent the stepwise functions as a function of floor function. We have applied this method on Haar wavelet, Sine–Cosine wavelet, Block-Pulse functions and Hybrid Fourier Block-Pulse functions to get the new representations of these functions.

Keyword: Floor function; Stepwise function; Haar wavelet; Sine–cosine wavelet; Block-pulse functions; Hybrid fourier block-pulse functions.