The DHT function is a function we found and downloaded from the Matlab toolbox, and its main formula in the code is as follows:



where,  is the DHT,  is the selected image block matrix, is the input radius,  is the number of sample points,  is the transformation order,  is the transformed coefficient block matrix,  is the spatial frequency,  is the radial distance,  is the integral kernel,  is the spectral factor, and  is the updated input radius.

The IDHT is expressed in the form shown as follows:



where,  represents the inverse discrete Hankel transform,  denotes the watermark coefficient block matrix,  signifies the integral kernel,  represents the spectral factor,  corresponds to the updated input radius, and  indicates the image watermark block.

Among the parameters for this experiment, we choose R=5, N=4, and n=0.

In the "private" folder, "frdr" is the integral function, and "JnRoots" is the root of the first kind of Bessel function, used to calculate the related parameters of the discrete Hankel transform.