

## W15HOGTRIBLOHIS

The object is a periodic structure. The FT of the object is multiplied by a blocking function for low frequencies.

The FT(inverse) of (FT of object)\*(Blocking Function) is the " new" image.  
The "new" image is compared to the original, that is the FT of (FT of object)  
The blocking function removes certain high frequencies of the FT.

Object: Sum of step func  $i := 1, 2 \dots 127$      $b := 2$      $qq := 7$

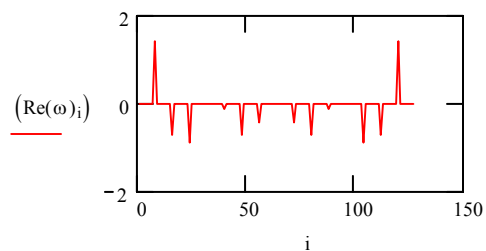
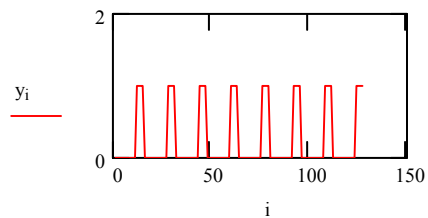
$$y_i := \sum_{n=0}^{qq} [\Phi[i - [4 \cdot (2 \cdot n + 1) + 2] \cdot b] - \Phi[i - [4 \cdot (2 \cdot n + 1) + 4] \cdot b]]$$

FT of the object is  $\omega$

$$\omega := \text{cfft}(y)$$

$$N := \text{last}(\omega)$$

$$N = 127$$

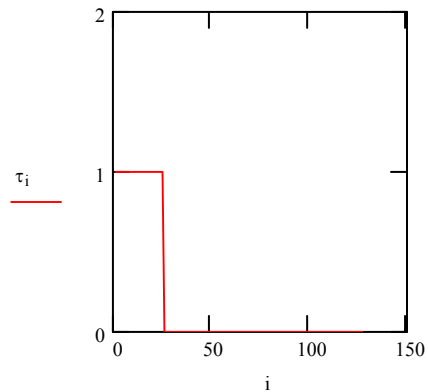


Blocking function  $y$

Low frequencies may pass

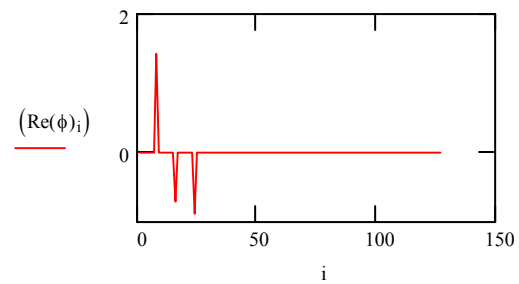
$$a := 25$$

$$\tau_i := \Phi(a - i) + \Phi[-(255 - a) + i]$$



**Product of FT of object and blocking function is the modified FT:**

$$\phi_i := \omega_i \cdot \tau_i$$

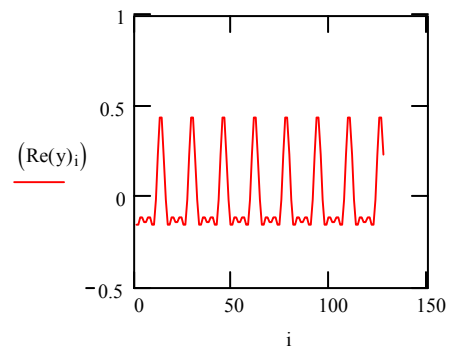


**The "new" image is the FT(inverse) of the modified FT**

$$y := \text{icfft}(\phi)$$

$$N2 := \text{last}(\phi)$$

$$N2 = 127$$



**For comparison: FT (inverse) of the unmodified FT**

$$x := \text{icfft}(\omega)$$

$$N2 := \text{last}(\omega)$$

$$N2 = 127$$

$$k := 0..N2$$

