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Subject: A wavelet question

Posted by [Konstantinos](#) on Wed, 01 Aug 2012 21:19:09 GMT

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Suppose that i want to use the biorthogonal wavelet filter that used for Jpeg2000 decomposition (Cohen-Daubechies 9/7 wavelet filter).

Let suppose that i do not want to write my own code or use available codes from internet AND i want to Use the IDL WV\_WDT function.

But if i want to use WV\_WDT i must first create, lets say, a WV\_FN\_jp2k function that describes my wavelet.

There are 2 ways to implement the wavelet transform Lifting and Convolution. I think that ILD uses the convolution method. (AM I CORRECT???)

According to IDL wavelet manual "The wavelet consists of two components, the scaling function which describes the low-pass filter for the wavelet transform, and the wavelet function which describes the band-pass filter for the transform."

So if i got it right I have to define the low pass and the band pass filter coefficients, in my WV\_FN\_jp2k.

So it must look like this.

FUNCTION ww\_fn\_j2k, Order, Scaling, Wavelet, Ioff, Joff

;Definition of Low Pass (scaling) and High pass (wavelet) Filter

; values from [http://en.wikipedia.org/wiki/Cohen-Daubechies-Feauveau\\_wavelet](http://en.wikipedia.org/wiki/Cohen-Daubechies-Feauveau_wavelet)

scaling= [0.026748757411d , \$

    -0.016864118443d, \$

    0.078223266529d , \$

    0.266864118443d , \$

    0.602949018236d , \$

    0.266864118443d , \$

    -0.078223266529d, \$

    -0.016864118443d, \$

    0.026748757411d ]

wavelet= [0d, 0.091271763114d , \$

    -0.057543526229d , \$

    -0.591271763114d , \$

    1.11508705d , \$

    -0.591271763114d , \$

    -0.057543526229d , \$

    0.091271763114d , 0]

order\_range = [1,1,1]

order = order\_range[2]

n = N\_ELEMENTS(scaling)

ioff = -n/2 + 2 ; offset for scaling

joff = ioff

```
info = {family:'j2k', $  
        order_name:'Order', $  
        order_range:[1,1,1], $  
        order:1, $  
        discrete:1, $  
        orthogonal:0, $  
        symmetric:1, $  
        support:1, $  
        moments:4, $  
        regularity:0.0}
```

```
RETURN, info  
END
```

COULD BE CORRECT or i am missing something??

Thank u in advance 4 your answers

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