
Subject: Convolution of two equally sized arrays

Posted by [Benjamin Hornberger](#) on Thu, 09 Dec 2004 23:03:03 GMT

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Hi all,

IDL's convol() function requires the kernel to be smaller than the array. Any ideas why?

According to Brigham, "The Fast Fourier Transform", the discrete convolution is defined as

$$y(k) = \text{Sum}(i=0, N-1) x(i) * h(k-i)$$

where both $x(k)$ and $h(k)$ are periodic functions with period N .

So I would think that if I have two equally gridded functions (two arrays a and b of equal size), I can convolve them by

`result = convol(a, b, /edge_wrap, center=0)`

and interchanging a and b should give the same result. I hope I understood the center keyword right.

But anyway, it doesn't work because IDL wants the kernel to be smaller than the array. Do I have to write my own convolution function?

Any hints?

Thanks,
Benjamin
