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Subject: Convolution, IDL & Numerical Recipes  
Posted by [aceves](#) on Thu, 31 Oct 2002 20:50:29 GMT  
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Hello..

I am using IDL for some of my research and have a particular problem with convolution of two arrays. I have used IDL's CONVOL procedure and subroutine CONVLV given in NUMERICAL RECEIPES..both give different results. I hope some one can shed light on what the reason might be.

Thank you. Hector

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Problem:

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At the IDL prompt I entered and obtained:

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```
IDL> a=[0,0,0,0,0,1,1,1,1,1,0,0,0,0,0] ; signal!
IDL> k=[1,0,0,0,0,0,0,0] ; kernel!
IDL> z=convol(a,k)
IDL> print, z
      0      0      0      0      0      0      0      0
      0      1      1      1      0      0      0      0
```

With Numerical Recipes (Example Book in Fortran, Program XCONVLV, Chap.13)

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The Signal file, or Data is (ibin,DATA)

```
1 0.
2 0.
3 0.
4 0.
5 0.
6 1.
7 1.
8 1.
9 1.
10 1.
11 0.
12 0.
13 0.
14 0.
```

```
15 0.  
16 0.
```

The Kernel or Response Function is (jbin,RESPNS=KERNEL) ..an identity filter

```
1 1.  
2 0.  
3 0.  
4 0.  
5 0.  
6 0.  
7 0.  
8 0.  
9 0.
```

The Fortran program gives (ibin,Convolution,Expected value):

I	CONVLV	Expected
1	0.000000	0.000000
2	0.000000	0.000000
3	0.000000	0.000000
4	0.000000	0.000000
5	0.000000	0.000000
6	1.000000	1.000000
7	1.000000	1.000000
8	1.000000	1.000000
9	1.000000	1.000000
10	1.000000	1.000000
11	0.000000	0.000000
12	0.000000	0.000000
13	0.000000	0.000000
14	0.000000	0.000000
15	0.000000	0.000000
16	0.000000	0.000000

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As shown, the results given by the numerical subroutine from NR  
gives the expected results and differ from the one by IDL's CONVOL.

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