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Subject: Inverse transforming a product of FFTs

Posted by [olde\\_english33](#) on Thu, 01 Jul 2004 16:22:00 GMT

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I have created two arrays of different time series. One is uniformly random, call it `runtime`, and the other one is based off of a recorded set of data values, call it `rectime`. Consider the following code, which I have implemented.

```
specruntime=fft(runtime)
specrectime=fft(rectime)
prod=specruntime*specrectime
yt=fft(prod, 1)
```

Now, according to the help files, when you take the forward transform, the sum is multiplied by  $1/N$ , which in my case is 31. My question is does taking the back transform of a product of two FFTs, both with 31 variables, lose a factor of 31 when taking the inverse transform? That is, after I have computed the inverse transform, do I still need to multiply by a factor of 31 to get the right data out?

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