Subject: Re: question relating to FFT Posted by pgrigis on Mon, 02 Mar 2009 19:37:22 GMT

```
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Hu wrote:
> Hi, there
> I try to use FFT function to smooth a curve (an array), and the code
> is like this:
>
>
> FUNCTION FOURIER, ARRAY
                                ;****FAST FOURIER FLITER
> FILTER=1.0/(1.0+DIST(152)/4.0)^2
 newARRAY=FFT(FFT(ARRAY,-1)*FILTER,1)
 RETURN, newARRAY
> END
>
 when I got an array X (has 152 elements) and use this function like:
> Y = FOURIER(X)
>
> I got an result Y with 152 elements, but all the elements are complex
> number, but How can I got an array filled with regular number, not
> complex number?
To get real number,
you can take the REAL_PART or the ABS of your array.
But you are using a very strange filter indeed...
Ciao.
Paolo
```

- > I mean, I want to use the result to calculate regression relationship
- > with other array.

Subject: Re: question relating to FFT Posted by Hu on Mon, 02 Mar 2009 22:03:47 GMT View Forum Message <> Reply to Message

On Mar 2, 2:37 pm, Paolo <pgri...@gmail.com> wrote:

- > Hu wrote:
- >> Hi, there
- >> I try to use FFT function to smooth a curve (an array), and the code
- >> is like this:

>

```
>> FUNCTION FOURIER, ARRAY
                                                  ;****FAST FOURIER
FLITER
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>>
     newARRAY=FFT(FFT(ARRAY,-1)*FILTER,1)
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>>
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> you can take the REAL_PART or the ABS of your array.
> But you are using a very strange filter indeed...
> Ciao,
> Paolo
>
>> I mean, I want to use the result to calculate regression relationship
>> with other array.
>
Thank you ,and Why do you say it's strange? I want to denoise the
whole curve( store as array) to make it more reasonable.
```

Subject: Re: question relating to FFT Posted by pgrigis on Mon, 02 Mar 2009 23:21:59 GMT View Forum Message <> Reply to Message

```
> On Mar 2, 2:37 pm, Paolo <pgri...@gmail.com> wrote:
>> Hu wrote:
>>> Hi, there
>>> I try to use FFT function to smooth a curve (an array), and the code
```

>>> is like this:

FLITER

Hu wrote:

```
FILTER=1.0/(1.0+DIST(152)/4.0)^2
>>>
```

newARRAY=FFT(FFT(ARRAY,-1)*FILTER,1) >>>

RETURN, newARRAY >>>

>>> FUNCTION FOURIER, ARRAY

:****FAST FOURIER

```
>>> END
>>
>>> when I got an array X (has 152 elements) and use this function like :
>>> Y = FOURIER(X)
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>>> complex number?
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>> To get real number,
>> you can take the REAL PART or the ABS of your array.
>> But you are using a very strange filter indeed...
>>
>> Ciao,
>> Paolo
>>
>>
>>
>>> I mean, I want to use the result to calculate regression relationship
>>> with other array.
>>
>>
> Thank you ,and Why do you say it's strange? I want to denoise the
> whole curve( store as array) to make it more reasonable.
Try plot, dist(152)
Does that look like what you want?
Ciao,
```

Subject: Re: question relating to FFT Posted by David Fanning on Mon, 02 Mar 2009 23:30:09 GMT View Forum Message <> Reply to Message

Paolo writes:

Paolo

- > Try plot, dist(152)
- > Does that look like what you want?

It could be. Using the DIST function is one of the ways you could construct a low-pass or high-pass filter for digital images:

http://www.dfanning.com/ip_tips/freqfiltering.html

Cheers,

David

--

David Fanning, Ph.D.

Coyote's Guide to IDL Programming (www.dfanning.com)

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: question relating to FFT Posted by pgrigis on Tue, 03 Mar 2009 16:14:43 GMT

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David Fanning wrote:

> Paolo writes:

>

- >> Try plot, dist(152)
- >> Does that look like what you want?

>

- > It could be. Using the DIST function is one of the ways
- > you could construct a low-pass or high-pass filter for
- > digital images:

>

http://www.dfanning.com/ip_tips/freqfiltering.html

Yes, but the OP was speaking of a "curve" with 152 elements, that is a one dimensional array. But dist(152) is a 152x152 array, and I don't think mixing 1-dim and 2-dim arrays like that is the right way to go;-) It would be a bit easier to understand what is going on by

It would be a bit easier to understand what is going on by just building the 1-dim filter explicitely...

Ciao,

Paolo

>

- > Cheers,
- >
- > David
- > -
- > David Fanning, Ph.D.
- > Coyote's Guide to IDL Programming (www.dfanning.com)
- > Sepore ma de ni thui. ("Perhaps thou speakest truth.")