
Subject: Re: re-binning with linear interpolation
Posted by [Wout De Nolf](#) on Wed, 01 Jun 2011 09:55:16 GMT
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On Wed, 1 Jun 2011 01:17:10 -0700 (PDT), abc <deearvind12@gmail.com>
wrote:

> I want to re-bin the wavelength at a step of 1 A and also the flux at
> the same step but with linear interpolation.

```
a=[[5201.720215,0.0097],$  
  [5205.345215,0.0088],$  
  [5208.970703,0.0080],$  
  [5212.596191,0.0094],$  
  [5216.221680,0.0133],$  
  [5219.846680,0.0167],$  
  [5223.472168,0.0169],$  
  [5227.097656,0.0156],$  
  [5230.722656,0.0145],$  
  [5234.348145,0.0138],$  
  [5237.973633,0.0130],$  
  [5241.599121,0.0118],$  
  [5245.224121,0.0110],$  
  [5248.849609,0.0116],$  
  [5252.475098,0.0134],$  
  [5256.100586,0.0147],$  
  [5259.725586,0.0139],$  
  [5263.351074,0.0126]]
```

```
; New wavelengths  
b=floor(a[0,0])  
e=ceil(a[0,-1])  
inc=1.  
x=b+inc*lindgen(1,(e-b)/inc+1)
```

```
; Linear interpolate flux  
y=interpol(a[1,*],a[0,*],x)
```

```
; Plot  
pa=plot(a,'+r-')  
pb=plot(x,y,'+-','overplot)
```

Subject: Re: re-binning with linear interpolation
Posted by [abc](#) on Wed, 01 Jun 2011 13:35:30 GMT
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On Jun 1, 11:55 am, Wox <s...@nomail.com> wrote:

> On Wed, 1 Jun 2011 01:17:10 -0700 (PDT), abc <deearvin...@gmail.com>

> wrote:

>

>> I want to re-bin the wavelength at a step of 1 A and also the flux at

>> the same step but with linear interpolation.

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> a=[[5201.720215,0.0097],\$

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> [5256.100586,0.0147],\$

> [5259.725586,0.0139],\$

> [5263.351074,0.0126]]

>

> ; New wavelengths

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>

> ; Linear interpolate flux

> y=interpol(a[1,*],a[0,*],x)

>

> ; Plot

> pa=plot(a,'+r-')

> pb=plot(x,y,'+-',/overplot)

Dear Wox,

Thanks a lot for your help. I tried to run the program as u mention and it works fine. But the problem is that as you took e=ceil(a[0,1]) it stops at 5206A. and it is not proceeding further. I have total 30000 data point. and I want to run the code for all of them.

I tried with

b=floor(a[0,*])

e=ceil(a[0,*])

but then I am getting an error
"LINDGEN: Expression must be a scalar or 1 element array in this
context: <LONG Array[1, 18]".

hope you understand the my problem.

Again thanks for the prompt response.

Subject: Re: re-binning with linear interpolation
Posted by [David Fanning](#) on Wed, 01 Jun 2011 14:02:00 GMT
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abc writes:

> Thanks a lot for your help. I tried to run the program as
> u mention and it works fine. But the problem is that as you took
> e=ceil(a[0,1]) it stops at 5206A. and it is not proceeding further. I
> have total 30000 data point. and I want to run the code for all of
> them.
> I tried with
> b=floor(a[0,*])
> e=ceil(a[0,*])
> but then I am getting an error
> "LINDGEN: Expression must be a scalar or 1 element array in this
> context: <LONG Array[1, 18]".
>
> hope you understand the my problem.

I've just written an article that may explain this more
clearly:

http://www.idlcoyote.com/code_tips/interpflux.php

Cheers,

David

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: re-binning with linear interpolation
Posted by [abc](#) on Wed, 01 Jun 2011 14:42:38 GMT
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On Jun 1, 4:02 pm, David Fanning <n...@idlcoyote.com> wrote:
> abc writes:
>> Thanks a lot for your help. I tried to run the program as
>> u mention and it works fine. But the problem is that as you took
>> e=ceil(a[0,1]) it stops at 5206A. and it is not proceeding further. I
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>> hope you understand the my problem.
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> I've just written an article that may explain this more
> clearly:
>
> http://www.idlcoyote.com/code_tips/interpflux.php
>
> Cheers,
>
> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:<http://www.idlcoyote.com/>
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Dear all,
Thanks a lot. It works fantastic. again thanks.

Subject: Re: re-binning with linear interpolation
Posted by [penteado](#) on Wed, 01 Jun 2011 16:58:47 GMT
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Just keep in mind that spectra are one of the cases where typically what would be of interest when downsampling is not to have points that "fall on the original line", as show in David's plot. It may be points that preserve the same area under the curve. Like the difference between a downsampled curve and one convolved with a kernel (which

brings the additional question of which kernel to use).

Subject: Re: re-binning with linear interpolation

Posted by [Jeremy Bailin](#) on Wed, 01 Jun 2011 19:01:31 GMT

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In the poster's case, though, they're upsampling, so that should be okay.

-Jeremy.
