Subject: Re: resampling on irregular grid
Posted by Fabzi on Thu, 07 Jun 2012 10:53:04 GMT
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On 06/07/2012 04:25 AM, bing999 wrote:
> Hi,
>
> I would like to resample an array A, from an irregular grid to another
> one .
>
> The 1st column A[0,*] (= the x-axis) is irregularly binned, and the
> 2nd column A[1,*] contains the corresponding y-axis values.
> I just want to resample the 2nd column A[1,*] according to another x-
> axis irregular grid, with P elements instead of N.
>
> This operation doesn't look quite complicated to perform, but I was
> wondering if there exists an optimized IDL function doing this.
> (especially because I have to deal with large arrays and I want the
> operation to be efficient...). REBIN and CONGRID seem to work only on
> regular arrays...
>
> Any idea?
> Thanks!

Hi,

Try GRIDDATA.

Cheers,

Fab

Subject: Re: resampling on irregular grid
Posted by Thibault Garel on Fri, 08 Jun 2012 02:16:08 GMT
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Thanks Fab.

I tried GRIDDATA, but it works only for interpolation of surfaces,
i.e. it recomputes f(x,y) from (x1,y1) coordinates to (x2,y2)
coordinates. What I need is resampling a 1D array of data values,
initially binned on a x1 values, to x2 values. (with both x1 and x2
being two different irregular grids).

Cheers

>
> Hi,
>
> Try GRIDDATA.
>
> Cheers,
>
> Fab

Subject: Re: resampling on irregular grid
Posted by wlandsman on Fri, 08 Jun 2012 03:52:17 GMT
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It sound like you just need to interpolate, e.g.

IDL> d2 = interpol(d1,x1,x2)

where x1,d1 are the input function points, and x2 is the output abscissa

On Thursday, June 7, 2012 10:16:08 PM UTC-4, bing999 wrote:
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> i.e. it recomputes f(x,y) from (x1,y1) coordinates to (x2,y2)
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> Cheers
>
>
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>> Hi,
>>
>> Try GRIDDATA.
>>
>> Cheers,
>>
>> Fab

Subject: Re: resampling on irregular grid
Posted by Thibault Garel on Fri, 08 Jun 2012 04:38:11 GMT
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Hi,

Thanks. Actually it is not an interpolation, as INTERPOL does it, that
I want. It is really a resampling of my data on another grid. I need
to conserve total(data).
I agree my previous comment with f(x1,y1), etc, could have been
misleading, sorry.

I can achieve this with histogram functions for instance but it is not
quite efficient...

Cheers

> It sound like you just need to interpolate, e.g.
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>
>>> Try GRIDDATA.
>
>>> Cheers,
>
>>> Fab

Subject: Re: resampling on irregular grid
Posted by Fabzi on Fri, 08 Jun 2012 11:18:48 GMT

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On 06/08/2012 06:38 AM, bing999 wrote:
> Hi,
>
> Thanks. Actually it is not an interpolation, as INTERPOL does it, that
> I want. It is really a resampling of my data on another grid. I need
> to conserve total(data).
> I agree my previous comment with f(x1,y1), etc, could have been
> misleading, sorry.
>
> I can achieve this with histogram functions for instance but it is not
> quite efficient...

You could try VALUE_LOCATE, maybe...

Fab

Subject: Re: resampling on irregular grid
Posted by natha on Fri, 08 Jun 2012 13:00:09 GMT
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When I re-sampling grids I normally use nearest neighbour interpolation. I create a matrix with the "projection" indices.
Something like :

```
FOR i=0l, N_ELEMENTS(lon_cart)-1 DO BEGIN

   diff=(lon1-lon_cart[i])^2.+(lat1-lat_cart[i])^2.
   min_latlon=MIN(diff,pos)

   IF min_latlon LE tol THEN BEGIN
     cart_xindex[i]=(pos MOD nlon)
     cart_yindex[i]=(pos  /  nlon) + yy_ini
   ENDIF
ENDFOR
```

This loop normally takes a lot of time but if one of your grids is regular you can improve it.
Hope this will help !

nata
