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Subject: Re: How to represent the spatial distribution of a parameter

Posted by [Jean H.](#) on Wed, 10 Dec 2008 21:20:57 GMT

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Hi Du,

ok, so you have a set of X and Y coordinates

You want to plot them in a regular grid, so to know in which cell to plot the corresponding data, you divide the coords by the cell size

ex:  $X = [1, 2, 2.5]$

$cellSizeX = 0.5$

$NewX = X / cellSizeX$

==> 2.00000    4.00000    5.00000

==> on the grid, your point will be in cell 2, 4 and 5

grid: 0-0.5-1-1.5-2-2.5-3-3.5-4-4.5-5 etc

Now, you want to know the size of your grid, so you do

$nbCol = \text{ceil}((\text{maxX} + 1.0) / cellSizeX)$

this assume that the 1st cell of the grid is coord 0;0, do  $\text{maxX} - \text{minX}$  if not.

So basically, you take the highest X value and divide by the cell size.

Up-round this, so that you are sure that the new coord is within your grid.

Create a grid (an array) with the number of columns and rows. Create a "count" layer, that you will use for doing the average.

For each point that you have, using the new X and Y coordinate, you

1) add the value V to the image,

2) add 1 to the count layer

then, simply divide the image by the count, and you get the average value in each pixel.

Jean

> Excuse me!

> I do not understand your routine.

> Could you show me an example? or give me some detailed explanations?

>

> Du

>

>

> On Dec 10, 9:05 pm, "Jean H." <jghas...@DELTHIS.ucalgary.ANDTHIS.ca>

> wrote:

>> Hi,

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>>
>> I did something similar a while ago... here is part of it:
>>
>> newX = Xdata / CellSizeX ;Agregate the data
>> newY = Ydata / CellSizeY
>>
>> nbCol = ceil((maxX+1.0) / cellSizeX)
>> nbRow = ceil((maxY+1.0) / cellSizeY)
>> nPoint = n_elements(newX)
>>
>> image = lonarr(nbCol, nbRow)
>> nbPointsXY = lonarr(nbCol, nbRow)
>>
>> for i = 0L, nPoint-1 do begin
>>     image[newX[i], newY[i]] += v[i]
>>     nbPointsXY[newX[i], newY[i]] += 1
>> endfor
>>
>> image /= nbPointsXY ;do the average
>>
>> tvscl, image
>>
>> Jean
>
```

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