how to use 'extent' in matplotlib.pyplot.imshow

I managed to plot my data and would like to add a background image (map) to it. Data is plotted by the long/lat values and I have the long/lat values for the image's three corners (top left, top right and bottom left) too.

I am trying to figure out how to use 'extent' option with imshow. However, the examples I found don't explain how to assign x and y for each corner (in my case I have the information for three corners).

How can I assign the location of three corners for the image when adding it to the plot?

Thanks

python plot matplotlib

asked Aug 9 '11 at 16:34

Chad
130 1 1 8

2 Answers

Extent defines the images max and min of the horizontal and vertical values. It takes four values like so: `extent=[horizontal_min,horizontal_max,vertical_min,vertical_max]` .

Assuming you have longitude along the horizontal axis, then you'll take `extent=[longitude_top_left,longitude_top_right,latitude_bottom_left,latitude_top_left]` . longitude_top_left and longitude_bottom_left should be the same, latitude_top_left and latitude_top_right should be the same, and the values within these pairs are interchangeable.

If your first element of your image should be plotted in the lower left, then use the `origin='lower'` imshow option as well, otherwise the 'upper' default is what you want.

answered Aug 9 '11 at 17:38

Yann
13.3k 2 46 58

Still not clear. What do you mean by "max of the horizontal values"? There are no values that are horizontal: there is a 2d matrix. Do you mean the maximum in each row? But there is a bunch of them. The maximum over those then? But then the horizontal and vertical are the same. – Victor Eijkhout Jun 16 '16 at 17:41

The max is the number written at the right edge of the matrix in the plot, the min is the number at the left edge. – Yann Jun 16 '16 at 18:24

Here's an example based on http://matplotlib.org/examples/pylab_examples/image_demo3.html showing use of extent.

```
#!/usr/bin/env python
from pylab import *
try:
    from PIL import Image
except ImportError, exc:
    raise SystemExit("PIL must be installed to run this example")

import matplotlib.cbook as cbook

datafile = cbook.get_sample_data('ada.png')
h = Image.open(datafile)
dpi = rcParams['figure.dpi']
figsize = h.size[0]/dpi, h.size[1]/dpi

figure(figsize=figsize)
ax = axes([0,0,1,1], frameon=False)
ax.set_axis_off()
ax.set_xlim(0,2)
ax.set_ylim(0,2)
im = imshow(h, origin='upper',extent=[-2,4,-2,4])  # axes zoom in on portion of image
im2 = imshow(h, origin='upper',extent=[0,.5,0,.5]) # image is a small inset on axes

show()
```

If you don't set your axis limits, they become your extents & then don't seem to have any effect.

edited Jul 30 '15 at 18:42

answered Sep 19 '12 at 17:54

Dave X
798 8 14