Subject: Re: Overlaying a contour on a small image
Posted by David Fanning on Fri, 29 Feb 2008 18:41:14 GMT
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Wayne Landsman writes:

> Does anyone have a routine to overlay a contour plot on a small image
> that is both accurate and aesthetically pleasing?

Isn't this what you want:

```
im = dist(9)
thispostion = [0.1, 0.1, 0.9, 0.9]
TVIMAGE, bytscl(im), POSITION=thisPosition, /KEEP_ASPECT_RATIO, $
  /NOINTERP, /ERASE
contour,im, Position=thisPosition,/xsty,/ysty,/noerase,$
  scale_vector(findgen(9), 0, 9), scale_vector(findgen(9), 0, 9)
```

You can find SCALE_VECTOR here:

  http://www.dfanning.com/programs/scale_vector.pro

Cheers,

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

Subject: Re: Overlaying a contour on a small image
Posted by David Fanning on Fri, 29 Feb 2008 19:06:51 GMT
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David Fanning writes:

> Wayne Landsman writes:
>
>> Does anyone have a routine to overlay a contour plot on a small image
>> that is both accurate and aesthetically pleasing?
>
> Isn't this what you want:
>
> im = dist(9)
> thispostion = [0.1, 0.1, 0.9, 0.9]
> TVIMAGE, bytscl(im), POSITION=thisPosition, /KEEP_ASPECT_RATIO, $

```
>     /NOINTERP, /ERASE
>  contour,im, Position=thisPosition,/xsty,/ysty,/noerase,$
>     scale_vector(findgen(9), 0, 9), scale_vector(findgen(9), 0, 9)
```

I don't know. What do you think of this:

```
im = dist(9)
im[2,2] = 15
im[4:5, 4:5] = 10
thispostion = [0.1, 0.1, 0.9, 0.9]
TVIMAGE, bytscl(im), POSITION=thisPosition, /KEEP_ASPECT_RATIO, $
   /NOINTERP, /ERASE
contour,im, Position=thisPosition,/xsty,/ysty,/noerase,$
   scale_vector(findgen(9), 0, 9), scale_vector(findgen(9), 0,9), $
   level = 6

isocontour, im, v, c, c_value = 6
Plots, v[0,0:6]+0.5, v[1,0:6]+0.5, color=fsc_color('dodger blue')
Plots, v[0,7:*]+0.5, v[1,7:*]+0.5, color=fsc_color('dodger blue')
```

Note how I have to add a half pixel to the ISOCONTOUR to get
it anywhere near where I want it. Weird.

Cheers,

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

Subject: Re: Overlaying a contour on a small image
Posted by pgrigis on Fri, 29 Feb 2008 19:15:38 GMT

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Just trying it out, using pg_plotimage

http://hea-www.harvard.edu/~pgrigis/idl_stuff/pg_plotimage.p ro

```
;linear test array, easier to deal with than dist
 a=[[0.,1,2,1,0],[1,2,3,2,1],[2,3,4,3,2],[1,2,3,2,1],[0,1,2,1 ,0]]

loadct,5
pg_plotimage,a,findgen(5),findgen(5)
contour,a,/over,levels=[0.5,1.5,2.5,3.5],color=0
```

(The contours should have a vertex exactly at the pixel
boundaries by construction of the image)

The half pixel at the boundary is missing however.

Paolo

David Fanning wrote:
> David Fanning writes:
>
>> Wayne Landsman writes:
>>
>>> Does anyone have a routine to overlay a contour plot on a small image
>>> that is both accurate and aesthetically pleasing?
>>
>> Isn't this what you want:
>>
>> im = dist(9)
>> thispostion = [0.1, 0.1, 0.9, 0.9]
>> TVIMAGE, bytscl(im), POSITION=thisPosition, /KEEP_ASPECT_RATIO, $
>> /NOINTERP, /ERASE
>> contour,im, Position=thisPosition,/xsty,/ysty,/noerase,$
>> scale_vector(findgen(9), 0, 9), scale_vector(findgen(9), 0, 9)
>
> I don't know. What do you think of this:
>
> im = dist(9)
> im[2,2] = 15
> im[4:5, 4:5] = 10
> thispostion = [0.1, 0.1, 0.9, 0.9]
> TVIMAGE, bytscl(im), POSITION=thisPosition, /KEEP_ASPECT_RATIO, $
> /NOINTERP, /ERASE
> contour,im, Position=thisPosition,/xsty,/ysty,/noerase,$
> scale_vector(findgen(9), 0, 9), scale_vector(findgen(9), 0,9), $
> level = 6
>
> isocontour, im, v, c, c_value = 6
> Plots, v[0,0:6]+0.5, v[1,0:6]+0.5, color=fsc_color('dodger blue')
> Plots, v[0,7:*]+0.5, v[1,7:*]+0.5, color=fsc_color('dodger blue')
>
>
> Note how I have to add a half pixel to the ISOCONTOUR to get
> it anywhere near where I want it. Weird.
>
> Cheers,
>

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

Subject: Re: Overlaying a contour on a small image
Posted by wlandsman on Fri, 29 Feb 2008 20:31:11 GMT
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On Feb 29, 1:41 pm, David Fanning <n...@dfanning.com> wrote:
> Isn't this what you want:
>
> im = dist(9)
> thispostion = [0.1, 0.1, 0.9, 0.9]
> TVIMAGE, bytscl(im), POSITION=thisPosition, /KEEP_ASPECT_RATIO, $
> /NOINTERP, /ERASE
> contour,im, Position=thisPosition,/xsty,/ysty,/noerase,$
> scale_vector(findgen(9), 0, 9), scale_vector(findgen(9), 0, 9)
>

I don't think any type of scaling is going to work. (The above example does not match the contour overlay with the single high pixel.) The point is that there really is no contour information at the half-pixel edges, since contours depend on the change between pixels. (You can display an image of 1 pixel, but you can't contour 1 pixel.) The program sent by Paolo (thanks!) works by not displaying the outer half pixel where there is no contour information. I actually like this approach.

The ISOCONTOUR routine looks like it could be used to extrapolate contours to the outer half pixel, perhaps in an easier way than the PATH_XY keyword to CONTOUR.

Cheers, --Wayne
