Subject: Re: contouring into continents only Posted by David Fanning on Mon, 19 Aug 2002 14:27:34 GMT View Forum Message <> Reply to Message

David (losiento@peromefrienaspam.com) writes:

- > I'm desperately trying to draw contour lines inside continental boundaries
- > only (I have irregularly gridded precipitation data). I have test several
- > 'brute force' methods (as creating a mask of 1 over land and 0 over seas)
- > but none seems to work properly.

>

> Is there any easy (as any esoteric keyword unknown to me) method to do that?

No esoteric keywords, unfortunately. :-(

But here is a modified example from my web page that uses a mask to only draw the portion of the contours that are over land:

PRO EXAMPLE

; Pick a seed, so you see what I see. Create data.

seed = -1L lat = RANDOMU(seed, 40) * (24./1.0) + 24 lon = RANDOMU(seed, 40) * 40.0/1.0 - 112 data = RANDOMU(seed, 40) * 1000

; Colors for plot.

LOADCT, 0 TVLCT, [255, 0], [255, 255], [0,0], 1

thisDevice = !D.Name Set_Plot, 'Z' Device, Set_Resolution=[800, 600]

; Set up the map projection of the Eastern US.

MAP_SET, 15, -87, 0, LIMIT=[24,-115,49,-67], \$
/CONTINENTS, /USA, /MERCATOR, Position=[0.1,0.1,.9,.9]

; Plot the random data locations.

PLOTS, Ion, lat, PSYM=4, COLOR=2

; Grid the irregularly spaced data.

```
gridData= SPH_SCAT(lon, lat, data, $
 BOUNDS=[-115., 24., -67., 49.], GS=[0.5,0.5], BOUT=bout)
 ; Calculate xlon and ylat vectors corresponding to gridded data.
s = SIZE(gridData)
xlon = FINDGEN(s(1))*((bout(2) - bout(0))/(s(1)-1)) + bout(0)
ylat = FINDGEN(s(2))*((bout(3) - bout(1))/(s(2)-1)) + bout(1)
 ; Put the contours on the map.
CONTOUR, gridData, xlon, ylat, /OVERPLOT, NLEVELS=20, C_COLOR=1
map = TVRD()
 ; Now draw the mask.
ERASE
MAP SET, 15, -87, 0, LIMIT=[24,-115,49,-67], $
 /MERCATOR, Position=[0.1,0.1,.9,.9]
Map Continents, /FILL, /USA, /HIRES, /CONTINENTS
mask = TVRD()
 ; Display both the upclipped and clipped contours.
Set Plot, thisDevice
Window, XSize=800, YSize=600, Title='Unclipped contours'
TV, map
Window, 1, XSize=800, YSize=600, Title='Clipped contours'
screen = Where(mask EQ 0)
map[screen] = 0
TV, map
END
It seems to do a reasonably good job.
Cheers.
David
David W. Fanning, Ph.D.
Fanning Software Consulting, Inc.
Phone: 970-221-0438, E-mail: david@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155
```

Subject: Re: contouring into continents only Posted by David Fanning on Mon, 19 Aug 2002 14:34:51 GMT

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David Fanning (david@dfanning.com) writes:

- > But here is a modified example from my web page that uses
- > a mask to only draw the portion of the contours that are
- > over land:

Uh, that program needs a DEVICE, DECOMPOSED=0 in it if you want to see colors. :-(

Cheers,

David

--

David W. Fanning, Ph.D.

Fanning Software Consulting, Inc.

Phone: 970-221-0438, E-mail: david@dfanning.com

Coyote's Guide to IDL Programming: http://www.dfanning.com/

Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: contouring into continents only Posted by David Fanning on Mon, 19 Aug 2002 16:09:40 GMT View Forum Message <> Reply to Message

David Fanning (david@dfanning.com) writes:

- > But here is a modified example from my web page that uses
- > a mask to only draw the portion of the contours that are
- > over land:

There were a couple of little things about my example program this morning that continued to annoy me, so I put a little more elaborate example of a solution for only drawing the contours that appear over land on my web page. You can find it here, if you are interested:

http://www.dfanning.com/tip_examples/map_on_land.pro

Cheers,

David

--

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Subject: Re: contouring into continents only Posted by air ilin on Mon, 19 Aug 2002 20:33:43 GMT View Forum Message <> Reply to Message

hi David,

i sometimes have to do the opposite (contours only over ocean areas) and find that setting the land points in the grid to !VALUES.F NAN seems to do the trick...IDL counts those points as "missing data" and just doesn't draw any contours over those areas.

best, -Johnny

"David" <losiento@peromefrienaspam.com> wrote in message news:<aig3k4\$2g9\$1@crispin.sim.ucm.es>...

> Hi all.

- > I'm desperately trying to draw contour lines inside continental boundaries
- > only (I have irregularly gridded precipitation data). I have test several
- > 'brute force' methods (as creating a mask of 1 over land and 0 over seas)
- > but none seems to work properly.

> Is there any easy (as any esoteric keyword unknown to me) method to do that?

- > thank you!
- > David

Subject: Re: contouring into continents only Posted by David on Tue, 20 Aug 2002 10:07:21 GMT

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Thank you both!

I finally achieved the graph I needed. Both methods work fine!

But I will sugesst to the IDL development team a new keyword like

```
contour, z, x, y, please_just_the_land=1; just_the_land=-1 should display just
the oceans :-)
or something
regards
david
Subject: Re: contouring into continents only
Posted by R.Bauer on Tue, 20 Aug 2002 14:39:22 GMT
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David wrote:
> Thank you both!
 I finally achieved the graph I needed. Both methods work fine!
  But I will sugesst to the IDL development team a new keyword like
>
 contour, z, x, y, please_just_the_land=1; just_the_land=-1 should display
  just the oceans :-)
>
  or something
>
> regards
> david
I aggree to this but not with this value because keyword_set(-1) is TRUE!
Reimar
Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de
http://www.fz-juelich.de/icg/icg-i/
a IDL library at ForschungsZentrum Juelich
```

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