
Subject: Re: problem with TRIANGULATION option in CONTOUR

Posted by [David Fanning](#) on Sat, 23 Oct 2010 12:57:19 GMT

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Ardhuin writes:

> So my triangles are OK for TRIGRID but not for CONTOUR... How is that
> possible ??

Have you tried your contour plot without the CLIP keyword?

What is CLIP doing for you?

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: problem with TRIANGULATION option in CONTOUR

Posted by [Ardhuin](#) on Sat, 23 Oct 2010 22:00:54 GMT

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Yes, the CLIP was useless, but even simplifying the command to

```
CONTOUR,tablep,x,y,$
  xstyle=5,ystyle=5,/FOLLOW,/CELL_FILL, TRIANGULATION=tri, $
  C_COLOR=colorind(0:c_numlev-2+addmini+addmaxi), $
  LEVELS=lev,/
  XRANGE=rangex,YRANGE=rangey, $
  POSITION=[blx*winx/mwinx,bly*winy/mwiny,trx*winx/
mwinx,try*winy/mwiny]
```

I do get the same error...

Fabrice Ardhuin

Subject: Re: problem with TRIANGULATION option in CONTOUR

Posted by [ben.bighair](#) on Sat, 23 Oct 2010 22:52:29 GMT

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On 10/23/10 8:35 AM, Ardhuin wrote:

```
> Dear all,
> I have been having problems with plotting output of a numerical model
> that uses unstructured grids using IDL: this model computes wave
> heights in the ocean. If I use the set of triangles from the model, I
> get really funny errors:
> Out of range subscript encountered:<LONG   Array[66453]>.
> although I only have 9626 points and about 16000 triangles.
>
> The command I use is
>   CONTOUR,tablep,x,y,$
>   xstyle=5,ystyle=5,/FOLLOW,/CELL_FILL, TRIANGULATION=tri,
> $
>   C_COLOR=colorind(0:c_numlev-2+addmini+addmaxi), $
>   LEVELS=lev,/
> NOERASE,TITLE=title,CLIP=[rangex(0),rangey(0),rangex(1),rangey(1)], $
>   XRANGE=rangex,YRANGE=rangey,MAX_VALUE=maxval, $
>   POSITION=[blx*winx/mwinx,bly*winy/mwiny,trx*winx/
> mwinx,try*winy/mwiny]
>
> Where tablep , x and y
> If I first do TRIANGULATE,X,Y,tri then the contours comes out OK...
> but they cut out through land boundaries and islands.
>
> So I was thinking: my triangles must be wrong ...
> but if I do a TRIGRID with my triangles then I can plot nicely with
> TV ...
>   array=trigrd(X,Y,tablep,tri,[dx,dy],
> [rangex(0),rangey(0),rangex(1),rangey(1)], $
>   MAX_VALUE=maxval)
>
> So my triangles are OK for TRIGRID but not for CONTOUR... How is that
> possible ??
>
```

Hi,

You might consider running the points through GRID_INPUT first. I really have no idea if that will help in this case, but it often comes to the rescue when interpolating.

Cheers,
Ben

Subject: Re: problem with TRIANGULATION option in CONTOUR
Posted by [David Fanning](#) on Sat, 23 Oct 2010 23:15:23 GMT

Ben Tupper writes:

- > You might consider running the points through GRID_INPUT first. I
- > really have no idea if that will help in this case, but it often comes
- > to the rescue when interpolating.

Yes, that's a good suggestion.

Or, I would try just gridding the data with Triangulate and Trigridd, and pass the gridded data to Contour. In other words, don't try to use the TRIANGULATION keyword. (I have to admit, I had never heard of this keyword!)

Here are the commands I use to grid irregular data from a book that will be hot of the press in a month or so. I get the X and Y vectors that go with the gridded data from the XGRID and YGRID output keywords to TriGrid.

```
Triangulate, lonlrr, latlrr, triangles
gridData = Trigridd(lonlrr, latlrr, dataLrr, $
  triangles, NX=41, NY=41, $
  XGrid=xgrid, YGrid=ygrid)
Contour, gridData, xgrid, ygrid, /Cell_Fill, $
  Levels=levels, Background=FSC_Color('white'),$
  Position=[0.125, 0.125, 0.95, 0.80], $
  Color=FSC_Color('black'), XStyle=1, YStyle=1, $
  C_Colors=Indgen(nlevels)+1
```

Cheers,

David

P.S. If you want to send the data, I'm always looking for perverse examples to add to the book! :-)

--

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: problem with TRIANGULATION option in CONTOUR
Posted by [Ardhuin](#) on Mon, 25 Oct 2010 19:06:05 GMT

Well, this is exactly what I do not want to do: I want to use my triangulation because it contains the information on the grid connectivity (islands are "holes" in the grid where the contouring should not do any filling).

I have put the basic dataset at this ftp address:

`ftp://ftp.ifremer.fr/ifremer/cersat/products/gridded/wavewat ch3/TOOLS/IDL/BUG/`
with some illustrative plots. The standard contour fills everything, including land. If I do a TRIGRID before a TV then I get what I want: land and Islands are blank... but I'd like to do this with contour to use the native data resolution...

Fabrice
