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Subject: Re: TRIANGULATE says "Points are co-linear, no solution"

Posted by [davidf](#) on Thu, 11 Nov 1999 08:00:00 GMT

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Craig Markwardt (craigmnet@cow.physics.wisc.edu) writes:

> Also, your transcript of the IDL session didn't seem to add up. I  
> understood how to fix it, but it wasn't ready to run. Doing these  
> things will encourage the user community to help you. Dammit. :-)

Yeah, I tried for 10 minutes and didn't get \*anywhere\*.  
That's about the limit of my patience. Good thing  
Craig was reading. :-)

Cheers,

David

--

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

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

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Subject: Re: TRIANGULATE says "Points are co-linear, no solution"

Posted by [Craig Markwardt](#) on Thu, 11 Nov 1999 08:00:00 GMT

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Jonathan Joseph <[jj@scorpio.tn.cornell.edu](mailto:jj@scorpio.tn.cornell.edu)> writes:

>  
> TRIANGULATE says "Points are co-linear, no solution"  
>

You didn't say what version of IDL you were running, but my guess is  
IDL 5.0. When I try it on a few different versions I get the  
following results:

IDL 5.0 fails

IDL 5.1 succeeds

IDL 5.2 succeeds, etc...

> Is the IDL triangulate code just really weak?

The answer is, triangulate \*was\* weak, but improved in later versions.  
However, I think the following fudge will work for what you need, even  
under IDL 5.0.

```
x1 = x + randomn(seed, 9853) * 0.0001
y1 = y + randomn(seed, 9853) * 0.0001
triangulate,x1,y1,tr,b
```

Adding a random component disturbs the points just enough so they are non co-linear, but below your precision level.

Now in return, and to satisfy my curiosity, you have to describe what your data represents... some coastal area? What are you doing with it? Buried treasure? New shipping lanes?

Craig

P.S. You could have avoid the byte-ordering problems (which I *did* have on an Intel machine) by posting an IDL "save" file. That solves the byte ordering problem and makes it easier to read in for others.

Also, your transcript of the IDL session didn't seem to add up. I understood how to fix it, but it wasn't ready to run. Doing these things will encourage the user community to help you. Dammit. :-)

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Craig B. Markwardt, Ph.D.      EMAIL: craigmnet@cow.physics.wisc.edu  
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response  
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Subject: Re: TRIANGULATE says "Points are co-linear, no solution"  
Posted by [davidf](#) on Fri, 12 Nov 1999 08:00:00 GMT  
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Jonathan Joseph (jj@scorpio.tn.cornell.edu) writes:

```
> Anyway, I *AM* running idl 5.2 (well, 5,2,1), so presumably,
> I should not have this problem. I have created an IDL save file
> now at the same place ftp://scorpio.tn.cornell.edu/jj/idl/
> The file is called test.sav
>
> The following code should work:
> And by that, I mean (not work).
> At least, it causes the error listed below on my
> system (IDL 5.2.1 running on HP-UX 10.20)
>
> ;; restore the data
> IDL> restore,'test.sav'
> ;; create a window
> IDL> window
```

```
> ;; plot the data to see that it looks reasonable
> IDL> plot,x,y,psym=3
> ;; try to triangulate the points
> IDL> triangulate,x,y,tr,b
> % TRIANGULATE: Points are co-linear, no solution.
```

Ah, so much better. :-)

For what it is worth, the TRIANGULATE command works perfectly on my Windows NT machine running IDL 5.2.1. Could this be an HP thing?

Cheers,

David

--

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Subject: Re: TRIANGULATE says "Points are co-linear, no solution"  
Posted by [Jonathan Joseph](#) on Fri, 12 Nov 1999 08:00:00 GMT  
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Sorry about the IDL code mixup, some cut/paste problems - and the fact that I changed variable names from xx and yy to x and y (after pasting) but forgot to change them all. In other words, I noticed that in the code I supplied that the readu command was missing the "y" at the end of it, and the plot command was plotting xx and yy instead of x and y (and probably shouldn't have had the /device on it). And I left off the "close, unit" command to clean up the open file unit - though that shouldn't have mattered. Sorry, I was in a rush and can only plead incompetency.

Anyway, I \*AM\* running idl 5.2 (well, 5,2,1), so presumably, I should not have this problem. I have created an IDL save file now at the same place <ftp://scorpio.tn.cornell.edu/jj/idl/>  
The file is called test.sav

The following code should work:  
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```

I have tried the jitter business before to good effect. I guess I'll go that route for now, I just didn't want to accidentally jitter it too much and get "negative triangles" when I applied the triangulation to the real positions.

As for what the data is... Well, it has something to do with stereo offsets between images. The interesting coastline effect is due to certain (dark) areas of the images are not being processed - and there is also a polygonal clipping region applied. The actual images are of asteroid 253 Mathilde.

And I apologize for the ranting - I was a bit over the edge yesterday afternoon.

-Jonathan

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