Subject: CT LUNG VISUALISATION
Posted by Fraser Hatfield on Tue, 21 Apr 1998 07:00:00 GMT
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I was wondering if someone advise me on the following.
I am trying to create a 3-D visualisation of the lungs from CT data
within IDL. To do this I use the Shade_volume and polyshade commands.
The problem I have is that the voxels are anisotropic, and so
the visualisation looks squashed on storing the slices in an array
of size (512,512,26)
The dimensions are as follows.
x=512,y=512,z=26, xres = 0.5mm, yres=0.5mm, zres=10mm.
(NB the ct slices are contiguous)
Could someone suggest the best way to manipulate the data so
that the visualisation has the correct proportions in all directions

Cheers
Fraser

Dr Fraser Niles Hatfield
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Subject: Re: CT LUNG VISUALISATION
Posted by Martin Schultz on Mon, 27 Apr 1998 07:00:00 GMT
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Fraser Hatfield wrote:
>
> I was wondering if someone advise me on the following.
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> (NB the ct slices are contiguous)
> Could someone suggest the best way to manipulate the data so
> that the visualisation has the correct proportions in all directions
>

Although I have never seen my loungs in IDL, you may want to try congrid
in order to interpolate your data in the z dimension:

```
newdata = congrid(data,512,512,520,/interpolate)
```

Hope this helps,
Martin.

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Subject: Re: CT LUNG VISUALISATION
Posted by David Foster on Thu, 30 Apr 1998 07:00:00 GMT
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Martin Schultz wrote:
>
> Fraser Hatfield wrote:
>>
>> I was wondering if someone advise me on the following.
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>> within IDL. To do this I use the Shade_volume and polyshade commands.
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>
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> in order to interpolate your data in the z dimension:
>
> newdata = congrid(data,512,512,520,/interpolate)
>

Since CT data is usually 16-bit integer data, this would create a
270MB array! I think a better approach would be to use IDL's system
variables !X.S, !Y.S, !Z.S, and !P.T together with the /T3D keyword

in the POLYSHADE() call, together with the Z buffer.

Here is a code snippet from one of our programs. Email me if you
have questions.

```
 !P.T = d.isosurf_pt
       !X.S = d.isosurf_x_s
       !Y.S = d.isosurf_y_s
       !Z.S = d.isosurf_z_s

       set_plot,'Z'
       erase
       b = polyshade(verts, polys, /t3d)   ; This brain is upside down
```

Dave

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