
Subject: Re: Newbie seeks help drawing multiple surface volumes
Posted by [Jeffrey M. Augenbaum](#) on Mon, 01 Dec 1997 08:00:00 GMT
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Thanks for your help. It was much appreciated. In visiting various IDL websites and looking at the IDL demo routines, I didn't see much in the way of applications to 3D CFD visualization other than astrophysics. Are other packages better suited to CFD visualization ?

David Fanning wrote:

```
> Jeffrey M. Augenbaum (augenbau@erols.com) writes:
>
>> I'm new to IDL and would like to plot two surface volumes with different
>> colors. For example, I want to visualize some 3D aspects of fluid flow
>> about an object.
>> ie. I want to plot an ellipsoid volume in one color and then a tube with
>> a different color. I'd appreciate any help with this.
>
> Why is it that people who are new to IDL always want to do
> the hardest things? How come new people don't just want to
> draw line plots? Sigh... Oh, well, at least he doesn't
> want to call this code from a C program, too. ;-)
```

How would I do this with Object graphics.

```
>
>
> The trick is to use the SET_SHADING command with the VALUES
> keyword to restrict his output to just a portion of the
> color table, which he has loaded with the colors he wants
> to use.
>
> Here is an example program I hacked together from some
> examples in the IDL documentation. It shows a blue tube
> (cylinder) going through a red sphere.
>
> *****
> PRO Example
>
> ; Load colors in different portions of the color table.
>
```

```

> LoadCT, 3, NColors=100          ; Red colors
> LoadCT, 1, NColors=100, Bottom=100 ; Blue colors
>
> ; Create a sphere.
>
> SPHERE = FLTARR(20, 20, 20)
> FOR X=0,19 DO FOR Y=0,19 DO FOR Z=0,19 DO $
>   SPHERE(X, Y, Z) = SQRT((X-10)^2 + (Y-10)^2 + (Z-10)^2)
> SHADE_VOLUME, SPHERE, 8, V1, P1
>
> ; Create a cylinder.
>
> MESH_OBJ, 3, V2, P2, Replicate(1, 48, 40), P4=40
>
> ; Render in the Z-graphics buffer
>
> thisDevice = !D.Name
> Set_Plot, 'Z'
> Device, Set_Resolution=[400,400]
> Erase
>
> ; Set !P.T Transformation matrix.
>
> Scale3, XRange=[0,20], YRange=[0,20], ZRange=[0,20]
>
> ; Render sphere in red colors.
>
> Set_Shading, Values=[0,99]
> image = POLYSHADE(V1, P1, /T3D)
>
> ; Render cylinder in blue colors.
>
> Set_Shading, Values=[100,199]
> T3D, Translate=[0.25,0.20,0]
> v2 = Vert_T3D(v2)
> image = POLYSHADE(V2, P2, /T3D)
>
> ; Take a snapshot of the Z-buffer.
>
> snap = TVRD()
>
> ; Display the snapshot on the display.
>
> Set_Plot, thisDevice
> Window, XSize=400, YSize=400
> TV, snap
> END
> *****

```

>
>> Please email me directly, as I don't read this group regularly.
>
> Only faithful readers who read the group regularly usually
> get their questions answered in this much detail. :-)

I'll try to follow this group more closely.

>
>
> Cheers,
>
> David
>
> -----
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