Subject: 3D Scatter Plot

Posted by aecorner on Thu, 06 Apr 2006 13:55:15 GMT

View Forum Message <> Reply to Message

Hi.

I created a 3D scatter plot (long, lat, alt) for some satellite data (using the very helpful tips on David Fanning's website). A few questions...

- 1) Is there a way to fill in the symbols? This seems like it should be obvious.
- 2) I need each point to be a different color based on it's Aerosol Optical Depth. I created an array of the color that each point needs to be. Can I set the COLOR keyword equal to this array in the PLOTS procedure to achieve that result?
- 3) Is there a way to display a 3D plot on a map projection? The x and y axes are longitude and latitude and I would like to slip a map in horizontally along the bottom of the plot.

Thanks, Amy

Subject: Re: 3D Scatter Plot

Posted by sjone7 on Wed, 27 Aug 2014 22:40:37 GMT

View Forum Message <> Reply to Message

How might one add error bars to a 3d scatter plot?

Subject: Re: 3D Scatter Plot

Posted by Paul Van Delst[1] on Thu, 28 Aug 2014 21:29:36 GMT

View Forum Message <> Reply to Message

On 08/27/14 18:40, sjone7 wrote:

> How might one add error bars to a 3d scatter plot?

How about plotting the data as semi-transparent orbs where the dimensions of the orbs represent the error bar extents?

See David Fanning's example code at:

http://www.idlcoyote.com/tip examples/scatter surface.pro

The original article is at:

http://www.idlcoyote.com/tips/scatter3d.html

cheers,

paulv

Subject: Re: 3D Scatter Plot

Posted by Paul Van Delst[1] on Thu, 28 Aug 2014 21:38:34 GMT

View Forum Message <> Reply to Message

On 08/28/14 17:29, Paul van Delst wrote:

- > On 08/27/14 18:40, sjone7 wrote:
- >> How might one add error bars to a 3d scatter plot?

>

- > How about plotting the data as semi-transparent orbs where the
- > dimensions of the orbs represent the error bar extents?

>

- > See David Fanning's example code at:
- > http://www.idlcoyote.com/tip\_examples/scatter\_surface.pro
- > The original article is at:
- > http://www.idlcoyote.com/tips/scatter3d.html

I forgot to mention that you will have to define your own non-spherical orb object (the one that comes with the IDL example code is spherical).

I guess it would be an "ellipsoid" object. Modifying the orb object shouldn't be too hard (he says!) since it's the degenerate case where the principal axes are all the same.

It will be a interesting programming exercise.

I wonder how fast it would render for, say, 10000 points?

cheers,

pauly

Subject: Re: 3D Scatter Plot

Posted by Jim Pendleton on Fri, 29 Aug 2014 03:39:04 GMT

View Forum Message <> Reply to Message

On Thursday, August 28, 2014 3:38:34 PM UTC-6, Paul van Delst wrote:

> On 08/28/14 17:29, Paul van Delst wrote:

>

>> On 08/27/14 18:40, sjone7 wrote:

>

```
>>> How might one add error bars to a 3d scatter plot?
>>
>> How about plotting the data as semi-transparent orbs where the
>> dimensions of the orbs represent the error bar extents?
>>
>
>> See David Fanning's example code at:
     http://www.idlcoyote.com/tip_examples/scatter_surface.pro
>>
   The original article is at:
     http://www.idlcoyote.com/tips/scatter3d.html
>
  I forgot to mention that you will have to define your own non-spherical
  orb object (the one that comes with the IDL example code is spherical).
>
>
  I guess it would be an "ellipsoid" object. Modifying the orb object
  shouldn't be too hard (he says!) since it's the degenerate case where
>
  the principal axes are all the same.
>
>
>
  It will be a interesting programming exercise.
>
>
  I wonder how fast it would render for, say, 10000 points?
>
> cheers,
>
> paulv
```

The orb object can be scaled anisotropically to turn it into an ellipsoid, without modifying the orb class itself.

IDL> o = orb() IDL> o.scale, 1., 1.5, 1. IDL> xobjview, o