Subject: Re: draw spheres in 3D space
Posted by Junum on Mon, 06 Jun 2011 18:53:41 GMT
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On Jun 6, 1:50 pm, Junum <junshi...@gmail.com> wrote:
> Hello,
>
> I wan to know how to draw spheres in 3D space with xyz axes.
> For example, I have 7 spheres with radius of 1 and its center is at
> (0,0,0)
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> (0,0,-1).
> Since I don't have idea for 3D drawing, it is hard to start.
> Could you let me know any clue, help, suggestion?
> Thank you very much.
>
> Sincerely,
> Jun

There was a typo.
A center of the last sphere should be (0,0,-2).

Jun

Subject: Re: draw spheres in 3D space
Posted by penteado on Mon, 06 Jun 2011 19:03:36 GMT
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On Jun 6, 3:53 pm, Junum <junshi...@gmail.com> wrote:
> On Jun 6, 1:50 pm, Junum <junshi...@gmail.com> wrote:
>
>
>
>
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>> Sincerely,
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> There was a typo.
> A center of the last sphere should be (0,0,-2).
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> Jun

xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
undocumented,linestyle='none')

Subject: Re: draw spheres in 3D space
Posted by Junum on Mon, 06 Jun 2011 19:14:05 GMT
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On Jun 6, 2:03 pm, Paulo Penteado <pp.pente...@gmail.com> wrote:
> On Jun 6, 3:53 pm, Junum <junshi...@gmail.com> wrote:
>
>
>
>
>
>> On Jun 6, 1:50 pm, Junum <junshi...@gmail.com> wrote:
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> undocumented,linestyle='none')

Thank you for suggestion, but I got error message,

IDL> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
IDL> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
undocumented,linestyle='none')

p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
undocumented,linestyle='none')
^
% Syntax error.

I am using IDL 7.0.

Subject: Re: draw spheres in 3D space
Posted by David Fanning on Mon, 06 Jun 2011 19:19:38 GMT
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Paulo Penteado writes:

> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
> undocumented,linestyle='none')

I admit that's pretty cool. But what does a "radius
of one" mean in this context? For example, here are
orb objects with a radius of 5, but clearly this
radius has nothing whatsoever to do with the axes:

```
p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*], $
  sym_object=orb(radius=5),/ undocumented,$
  linestyle='none')
```

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: draw spheres in 3D space
Posted by Michael Galloy on Mon, 06 Jun 2011 19:21:49 GMT
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On 6/6/11 1:14 PM, Junum wrote:
> On Jun 6, 2:03 pm, Paulo Penteado<pp.pente...@gmail.com> wrote:
>> On Jun 6, 3:53 pm, Junum<junshi...@gmail.com> wrote:
>>
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>>
>>
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>>> Jun
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>> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
>> undocumented,linestyle='none')

>
> Thank you for suggestion, but I got error message,
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> IDL> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
> IDL> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
> undocumented,linestyle='none')
>
> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
> undocumented,linestyle='none')
>   ^
> % Syntax error.
>
> I am using IDL 7.0.

This should work on older versions of IDL:

```
model = obj_new('IDLgrModel')
model->add, obj_new('orb', pos=[ 0, 0, 0], radius=1., color=[255, 215, 0])
model->add, obj_new('orb', pos=[ 2, 0, 0], radius=1., color=[255, 215, 0])
model->add, obj_new('orb', pos=[-2, 0, 0], radius=1., color=[255, 215, 0])
model->add, obj_new('orb', pos=[ 0, 2, 0], radius=1., color=[255, 215, 0])
model->add, obj_new('orb', pos=[ 0,-2, 0], radius=1., color=[255, 215, 0])
model->add, obj_new('orb', pos=[ 0, 0, 2], radius=1., color=[255, 215, 0])
model->add, obj_new('orb', pos=[ 0, 0,-2], radius=1., color=[255, 215, 0])

xobjview, model
```

Mike
--
Michael Galloy
www.michaelgalloy.com
Modern IDL, A Guide to Learning IDL: http://modernidl.idldev.com
Research Mathematician
Tech-X Corporation

Subject: Re: draw spheres in 3D space
Posted by penteado on Mon, 06 Jun 2011 19:26:26 GMT

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On Jun 6, 4:14 pm, Junum <junshi...@gmail.com> wrote:
> Thank you for suggestion, but I got error message,
>
> IDL> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
> IDL> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
> undocumented,linestyle='none')
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> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/

> undocumented,linestyle='none')
>   ^
> % Syntax error.
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> I am using IDL 7.0.

That will not work in 7.0. This will:

xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
orb=obj_new('orb')
iplot,xyz,/scatter,sym_object=orb

Subject: Re: draw spheres in 3D space
Posted by Junum on Mon, 06 Jun 2011 19:31:22 GMT
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On Jun 6, 2:21 pm, Michael Galloy <mgal...@gmail.com> wrote:
> On 6/6/11 1:14 PM, Junum wrote:
>
>
>
>
>
>
>> On Jun 6, 2:03 pm, Paulo Penteado<pp.pente...@gmail.com> wrote:
>>> On Jun 6, 3:53 pm, Junum<junshi...@gmail.com> wrote:
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>>>> On Jun 6, 1:50 pm, Junum<junshi...@gmail.com> wrote:
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>>>> > (0,-2,0)
>>>> > (0,0,2)
>>>> > (0,0,-1).
>>>> > Since I don't have idea for 3D drawing, it is hard to start.
>>>> > Could you let me know any clue, help, suggestion?
>>>> > Thank you very much.
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>>>> > Sincerely,
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>>>> There was a typo.

>>>> A center of the last sphere should be (0,0,-2).
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>>>   xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
>>> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
>>> undocumented,linestyle='none')
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>> Thank you for suggestion, but I got error message,
>
>> IDL>   xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0, 0,-2]]
>> IDL> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
>> undocumented,linestyle='none')
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>> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
>> undocumented,linestyle='none')
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> model->add, obj_new('orb', pos=[2, 0, 0], radius=1., color=[255, 215, 0])
> model->add, obj_new('orb', pos=[-2, 0, 0], radius=1., color=[255, 215, 0])
> model->add, obj_new('orb', pos=[0, 2, 0], radius=1., color=[255, 215, 0])
> model->add, obj_new('orb', pos=[0,-2, 0], radius=1., color=[255, 215, 0])
> model->add, obj_new('orb', pos=[0, 0, 2], radius=1., color=[255, 215, 0])
> model->add, obj_new('orb', pos=[0, 0,-2], radius=1., color=[255, 215, 0])
>
> xobjview, model
>
> Mike
> --
> Michael Galloywww.michaelgalloy.com
> Modern IDL, A Guide to Learning IDL:http://modernidl.idldev.com
> Research Mathematician
> Tech-X Corporation

Thank you very much for help.
It is really cool.
How can I add xyz axes on this plot?
Thank you.

Jun

Subject: Re: draw spheres in 3D space
Posted by Junum on Mon, 06 Jun 2011 19:40:04 GMT
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On Jun 6, 2:26 pm, Paulo Penteado <pp.pente...@gmail.com> wrote:
> On Jun 6, 4:14 pm, Junum <junshi...@gmail.com> wrote:
>
>> Thank you for suggestion, but I got error message,
>
>> IDL> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
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>> undocumented,linestyle='none')
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>> undocumented,linestyle='none')
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>
> That will not work in 7.0. This will:
>
> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
> orb=obj_new('orb')
> iplot,xyz,/scatter,sym_object=orb

Dear Paulo Penteado

Thank you for your help.
Now I don't have any problem, except symbols are too small.
I can change symbol size manually, but what I wanted is seven spheres
attached, so I specified size and center of spheres.
Can I specify the size of sphere?
Thank you.

Jun

Subject: Re: draw spheres in 3D space
Posted by penteado on Mon, 06 Jun 2011 23:15:29 GMT
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On Jun 6, 4:19 pm, David Fanning <n...@idlcoyote.com> wrote:
> Paulo Penteado writes:
>> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
>> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*],sym_object=orb(),/
>> undocumented,linestyle='none')
>

> I admit that's pretty cool. But what does a "radius
> of one" mean in this context? For example, here are
> orb objects with a radius of 5, but clearly this
> radius has nothing whatsoever to do with the axes:
>
> p=plot3d(xyz[0,*],xyz[1,*],xyz[2,*], $
> sym_object=orb(radius=5),/ undocumented,$
> linestyle='none')

Yes, I had not noticed that a "hard" radius was intended. Those sizes are unrelated to the data space because the spheres are taken as plot symbols, and as such have "soft" sizes. You can see that if you change the size of the window: the symbols will remain the same size, while the axes will change.

Borrowing from Mike's example, this could be done with iplot (similarly with plot3d()) by making a bunch o spheres with the proper sizes and positions in a model, then putting that model into the plot's data space:

```
 xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
model = obj_new('IDLgrModel')
for i=0,6 do model-
> add,obj_new('orb',pos=xyz[*,i],radius=1.,color=[255, 215, 0])
iplot,xyz,/scale_isotropic,/scatter,sym_index=0
id=itgetcurrent(tool=ot)
oplot3d=ot->getbyidentifier(ot->findidentifiers('*/PLOT3D',/
visualization))
oplot3d->add,model
```

Subject: Re: draw spheres in 3D space
Posted by Junum on Tue, 07 Jun 2011 04:26:23 GMT

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On Jun 6, 6:15 pm, Paulo Penteado <pp.pente...@gmail.com> wrote:
> On Jun 6, 4:19 pm, David Fanning <n...@idlcoyote.com> wrote:
>
>> Paulo Penteado writes:
>>> xyz=[[0,0,0],[2,0,0],[-2,0,0],[0,2,0],[0,-2,0],[0,0,2],[0,0, -2]]
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>  id=itgetcurrent(tool=ot)
>  oplot3d=ot->getbyidentifier(ot->findidentifiers('*/PLOT3D',/
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```

Thank very much Paulo.
It helps me a lot.

Jun
