Subject: Re: how to define theta and phi of a sphere in IDL
Posted by David Fanning on Sun, 15 Nov 2009 05:18:22 GMT
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nisha katyal writes:

> I have to draw spheres using idl . I want to define x,y,z in terms of
> r,theta and phi. Do i have to define theta and phi both as following:
>
> IDL> phi=2*!pi*(findgen(npoints)/(npoints-1))

You can use CV_COORD to convert back and forth from
polar, spherical, and rectangular coordinates. You
don't have to do it yourself.

> And also if i want to plot,should i plot x,z or y,z or x,y?

Generally, if you are plotting on a rectangular
coordinate system, you will need rectangular coordinates.
But you can do this conversion just before plotting.

Cheers,

David

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

Subject: Re: how to define theta and phi of a sphere in IDL
Posted by nisha katyal on Sun, 15 Nov 2009 05:33:28 GMT
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On Nov 15, 10:18 am, David Fanning <n...@dfanning.com> wrote:
> nisha katyal writes:
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>> r,theta and phi. Do i have to define theta and phi both as following:
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>
> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

No, actually i do not want to define it that way. I want to define
x,y,z cordinates in terms of r,theta,phi. i.e
x=r*sin(theta)cos(phi)
y=r*cos(theta)sin(phi)
z=r*cos(theta)

I don not kno the difference in defining theta and phi....

Subject: Re: how to define theta and phi of a sphere in IDL
Posted by David Fanning on Sun, 15 Nov 2009 06:11:35 GMT
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nisha katyal writes:

> No, actually i do not want to define it that way. I want to define
> x,y,z cordinates in terms of r,theta,phi. i.e
> x=r*sin(theta)cos(phi)
> y=r*cos(theta)sin(phi)
> z=r*cos(theta)
>
> I don not kno the difference in defining theta and phi....

Well, maybe a picture will help:

http://en.wikipedia.org/wiki/Spherical_coordinate_system

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
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Subject: Re: how to define theta and phi of a sphere in IDL
Posted by penteado on Sun, 15 Nov 2009 06:20:47 GMT
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On Nov 15, 3:33 am, nisha katyal <nishahans...@gmail.com> wrote:
> No, actually i do not want to define it that way. I want to define
> x,y,z cordinates in terms of r,theta,phi. i.e
> x=r*sin(theta)cos(phi)
> y=r*cos(theta)sin(phi)
> z=r*cos(theta)
>
> I don not kno the difference in defining theta and phi....

Don't you mean y=r*sin(theta)sin(phi)? If so, theta is the angle from the north pole to the parallel where your point is (90°-latitude), and phi is the longitude. And David was saying that this conversion could be done as

xyz=cv_coord(from_sphere=[phi,!dpi/2d0-theta,r],/to_rect)
