Subject: Re: 3D scatter plot
Posted by landers on Tue, 25 May 1993 13:07:57 GMT
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If I understand what you want, you want to plot points in a 3-d plot
(perspective view). Thats pretty easy - you set up the axes, etc with
surface and use plots to make the plot, as in

```
WAVE> x = randomn(s,10)
WAVE> y = randomn(s,10)
WAVE> z = randomn(s,10)
WAVE> ; set axes and !p.t transformation by plotting a dummy array....
WAVE> surface,[[0,0],[0,0]], /NoData, xrange=[-3,3],yrange=[-3,3], /Save
WAVE> ; plot them points - don't forget the /t3d keyword or /save above
WAVE> plots, x, y, z, /t3d
```

The only problem with this is that it draws your symbols parallel to the XY
plane, and that may not be what you want.
If you want the symbols parallel to the plotting surface (i.e. your screen),
then transform them yourself something like this:

```
WAVE> surface,[[0,0],[0,0]], /NoData, xrange=[-3,3],yrange=[-3,3], /Save
WAVE> ; make normalized coords of your data
WAVE> unit = replicate(1., n_elements(x))
WAVE> xx = !X.S(0) + (!X.S(1) * x)
WAVE> yy = !Y.S(0) + (!Y.S(1) * y)
WAVE> zz = !Z.S(0) + (!Z.S(1) * z)
WAVE> ; transform using !p.t
WAVE> v = [ [xx], [yy], [zz], [unit] ] # !p.t
WAVE> ; back to data coords
WAVE> v(*,0) = ( v(*,0) - !x.s(0) ) / !x.s(1)
WAVE> v(*,1) = ( v(*,1) - !y.s(0) ) / !y.s(1)
WAVE> v(*,2) = ( v(*,2) - !z.s(0) ) / !z.s(1)
WAVE> ; now plot it - note NO /t3d keyword - make sure !p.t3d isn't set, too
WAVE> plots,transpose(v(*,0:2)),psym=1
```

Because this draws psyms parallel to your plot surface, they're more readable,
but it kinda looses some of the 3D-ishness that the simpler example had.

Hope this helps,
Dave