
Subject: Re: Creating mesh from XYZ points
Posted by [Dick Jackson](#) on Thu, 14 Mar 2013 05:58:22 GMT
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Hi Mairan,

TRIANGULATE will work well on a set of 2-D points, so we'll need another trick for your XYZ points.

Option 1: Two convex hulls

These look like two convex shapes that may or may not intersect (it looks like they do). Would it suffice to make two solid intersecting meshes? I'll assume you have (or can make) these arrays:

xyz1, a FltArr(3, nPts1) with XYZ values for mesh 1
xyz2, a FltArr(3, nPts2) with XYZ values for mesh 2

:: Random point sets that should make two intersecting lumps

```
xyz1 = RandomU(seed, 3, 100)
xyz2 = RandomU(seed, 3, 100)+0.7
```

```
QHull, xyz1, tri1
QHull, xyz2, tri2
```

:: Make connectivity arrays from list of triangles

```
conn1 = [Replicate(3, 1, (N_Elements(tri1)/3)), tri1]
conn2 = [Replicate(3, 1, (N_Elements(tri2)/3)), tri2]
```

```
oMesh1 = Obj_New('IDLgrPolygon', xyz1, Polygons=conn1, Style=2, Color=[255,0,0])
; You probably want to use Vert_Colors to add the colour information!
oMesh2 = Obj_New('IDLgrPolygon', xyz2, Polygons=conn2, Style=2, Color=[0,0,255])
```

```
XObjView, [oMesh1, oMesh2]
```

Option 2: Two meshes made by Mesh_Obj

If you are generating these points on a spherical grid or some other regular way, then you may be able to use Mesh_Obj to make each of the grids. If Option 1 didn't meet your needs, post more info on how the points are generated.

Speaking of Mesh_Obj, if anyone's looking for my code to make the animated GIF for my spinning-balloon-letters logo, I moved the link off of my home page to my website's "Other" page. See the logo at www.d-jackson.com (click for a big rendering) and the code is here:

<http://www.d-jackson.com/images/djsclogo.pro>

Cheers,
-Dick

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On Wednesday, March 13, 2013 8:51:25 AM UTC-7, Mairan Teodoro wrote:

> Hi all!
>
> I would like some advise on how to create a mesh grid from a set of XYZ coordinates.
>
> Please, take a look at this figure to have an idea on what I'm talking about:
>
> <https://dl.dropbox.com/u/6573328/sample.png>
>
> The 3 plots show each of the points at their respective XYZ coordinate but I would like to show
> a "solid" structure with a surface and not a bunch of points.
>
> I tried using the TRIANGULATE/TRIGRID approach without achieving what I want. In fact, the
> figure in the following link is the result from this approach:
>
> <https://dl.dropbox.com/u/6573328/sample2.png>
>
> Thank you in advance for any help.
>
> Cheers,
>
> m.
