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Subject: Re: Create DXF file out of vertices and connectivities

Posted by [Dick Jackson](#) on Tue, 29 Jun 2004 06:15:27 GMT

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"Karl Schultz" <[kschultz\\_no\\_spam@rsinc.com](mailto:kschultz_no_spam@rsinc.com)> wrote in message  
news:<10e0jrc69hn5715@corp.supernews.com>...

>  
> "Tukee10" <[turgutkaracay@hotmail.com](mailto:turgutkaracay@hotmail.com)> wrote in message  
>  
> news:e6feeb9d9fa4d9dad40235e15f6ab40b@localhost.talkaboutpro gramming.com...

>> Hello,

>> I have following problem: I created the mesh structure of a volume  
with

>> INTERVAL\_VOLUME, which gives me vertices (3,n) and connectivities  
(1,m).

>> When I display it with XOBJVIEW, I get a wonderful 3d structure. How  
do I

>> create a DXF file that contains the mesh structure ?

>> I know that it works with an IDLffDXF object.

[...]

>> It creates a DXF file, but when I open the file with AutoCAD, it  
seems to

>> connect all the point in a strange way.

>> Is there anyone who has an idea ?

>

> INTERVAL\_VOLUME returns a list of vertices and a connectivity list  
that

> represents tetrahedra (3D pyramid-like objects). If you used this  
vertex

> list and this connectivity list to create an IDLgrPolygon that you  
then

> displayed in XOBJVIEW, you should have seen quite a mess - or you got  
very

> lucky.

>

> You should use TETRA\_SURFACE [...]

"Tukee10" <[turgutkaracay@hotmail.com](mailto:turgutkaracay@hotmail.com)> wrote in message

news:2d0234904ddaf48a12f5006bb0ae4bdb@localhost.talkaboutpro gramming.com...

> Thank you for your response.

> I forgot to add, that I'm using TETRA\_SURFACE to display in XOBJVIEW,

> which worked quite well. It displays the mesh structure I want, but  
when I

> write a DXF file, the mesh looks weird when I open it with AutoCAD. Is

> IDL\_DXF\_POLYGON the right structure format, if yes, does the DXF\_TYPE  
has

> to be 10 and are there other parameters to consider ?

Hi Tukee, Karl,

I tried this out too, and indeed it seems the file is mucked up. It does look like a DXF writing bug to me. If you want to look further, here's what I did:

=====

PRO WriteDXFTest

:: From online help for Interval\_Volume

```
RESTORE, FILEPATH('clouds3d.dat', $
  SUBDIRECTORY=['examples','data'])
INTERVAL_VOLUME, rain, 0.1, 0.6, verts, conn
conn = TETRA_SURFACE(verts, conn)
; oRain = OBJ_NEW('IDLgrPolygon', verts, POLYGONS=conn, $
; COLOR=[255,255,255], SHADING=1)
; XOBJVIEW, oRain, BACKGROUND=[150,200,255]
```

:: Simplify mesh

```
ntri=mesh_decimate(verts,conn,connout,vertices=vertsdec,perc ent_poly=10)
verts=vertsdec
conn=connout
```

:: From Tukee10

```
ptr_verts = ptr_new(Verts)
ptr_conn = ptr_new(Conn)
```

```
oDXF = OBJ_NEW('IDLffDXF')
poly = {IDL_DXF_POLYGON}
poly.vertices = ptr_verts
poly.connectivity = ptr_conn
poly.dxf_type = 10
```

```
oDXF->PutEntity, poly
IF (not oDXF->Write('Mesh_Model.dxf')) THEN PRINT, 'Write Failed.'
OBJ_DESTROY, oDXF
```

:: Try it out

```
oModel = Get_DXF_Objects('Mesh_Model.dxf')
oDXFRead = oModel -> Get(/All) ; IDLgrPolygon
oModel -> Remove, /All
XObjView, oDXFRead
```

END ; WriteDXFTest

=====

... it looks like mostly-correct points are being joined up in a haphazard way, with a lot of joining of points in sequence along x and y.

Are we missing something in the DXF writing?

Cheers,

--

-Dick

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