Subject: Polygon mesh returned by SHADE_VOLUME
Posted by bowman on Wed, 04 Feb 1998 08:00:00 GMT
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I am using the IDL SHADE_VOLUME built-in procedure to find an isosurface on a 3-D Cartesian grid. According to the documentation, the method used in SHADE_VOLUME is based on the PolyPaint rendering package developed by Klemp et al. at NCAR. PolyPaint is described in an American Meteorological Society Conference Proceedings from 1990.

According to the PolyPaint document, which has a clear, well-illustrate description of the polygon generation algorithm (based on 'marching cubes'), PolyPaint will produce one or more polygons for each grid volume in the data grid. The polygons are not necessarily planar, however, and they contain up to 7 vertices.

I need to manipulate the polygon mesh, and it is much easier to do if the polygons are all triangles. The PolyPaint document states that PolyPaint allows the user to specify the maximum number of vertices in polygons.

Does anyone know whether SHADE_VOLUME has a similar undocumented parameter?

My simple method for making triangles from polygons (Pick a vertex. Draw lines to each of the other vertices to make triangles.) may not work too well for some of the more complex, non-planar polygons.

E-mail replies appreciated. Replace the NULL in the e-mail address below with an 'at' symbol.

Many thanks, Ken Bowman

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Dr. Kenneth P. Bowman, Associate Professor 409-862-4060
Department of Meteorology 409-862-4466 fax
Texas A&M University bowmanNULLcsrp.tamu.edu
College Station, TX 77843-3150 PP-Glider