Subject: MESH_DECIMATE anyone?
Posted by noymer on Fri, 03 Nov 2000 09:37:16 GMT
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Dear C.l.i-p,

I have a problem, and I *think* that MESH_DECIMATE may be my solution, but I'm a little confused. This function was introduced in IDL 5.3, which is also the version I am using.

Here is the deal: I have a huge matrix of simulated data in three dimensions. It's big enough that 3D wireframes are too dense (like solid black), and need to be thinned out. One solution is to sample the data. This has several appealing aspects. The data in this case are regularly-gridded so the mechanics of sampling are simple. And since I am simulating the data anyway, I could actually just program the thing to output less data but to output the correct average of n points, which is even better than just sampling.

But before I do that, I thought I would take MESH_DECIMATE out for a spin. But I have become confused (what else is new?) if this is really the function I want. My data are a rectangular array of z-values, which I plot using the SURFACE procedure (DG). The data start of as a list of (x,y,z) triplets, R*C long. Following advice I got about a year ago from this newsgroup, I convert the data into three separate R*C arrays using the REFORM function. The z array is the actual data, and the x and y arrays make sure the axes are labeled correctly. All I want to do is thin out the z array and make a new, less dense, surface out of it.

The syntax of MESH_DECIMATE is:
Result = MESH_DECIMATE (Verts, Conn, Connout [, /VERTICES] [, PERCENT_VERTICES=percent | , PERCENT_POLYGONS=percent])

where:
Verts=Input array of polygonal vertices [3, n].
Conn=Input polygonal mesh connectivity array.
Connout=Output polygonal mesh connectivity array.

Now, Conn is going to be my z-data (???), and Connout will be the decimated surface. I'm quite confused about Verts. My vertices are just my simulated data points, so for should I feed to Verts my original list of (X,Y,Z) triplets??? I'm having trouble visualizing this. Even if I can get a nicely-thinned-out z-array, what happens to my x and y arrays?

Usually I test things on small datasets before I do it on a big

dataset---but how do I decimate a 3x3 array? :-0

Beore I just go back to sampling the data, I'd be grateful if someone out there who has become an expert in MESH_DECIMATE could point me in the right direction. For regularly gridded data, I'm beginning to think that MESH_DECIMATE may be overkill---but I'd be interested to learn if this is incorrect.

TIA,
  Andrew

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Andrew