Subject: Re: Matching volumes and surfaces
Posted by K. Bowman on Fri, 20 Jan 2006 15:04:21 GMT
View Forum Message <> Reply to Message

In article <k-bowman-4168BE.20523319012006@news.tamu.edu>,
"Kenneth P. Bowman" <k-bowman@removethis.tamu.edu> wrote:

I follow up my previous posting with a little more info on my isosurface rendering problem.

I realized that you can show the mesh used to create the isosurface. This gives some hints as to the possible problem. Turning on the mesh and rotating the view gives this

http://csrp.tamu.edu/hiaper/archive/render/rendering2.jpg

The yellow square is the output of iSurface. The gray square and mesh is the output of iVolume with isosurface. Because of the way the isosurface slices diagonally through the volume, the mesh has long narrow triangles at the grid boundaries of the original 3-D grid. I think this is correct.

This view, however, shows that the location of the mesh boundaries drifts with respect to the grid coordinates (~0.9, 1.8, ...) I think the mesh lines should coincide with the grid coordinates (~1, 2, ...).

This strongly suggests to me that there is an error in the rendering or mesh calculation, with the right and top edges of the gray isosurface ending at 9.0 rather than 10.0 (dividing the data range by n instead of n-1 somewhere).

If I re-run the program with VOLUME_DIMENSIONS = [11, 11, 11], I see this

http://csrp.tamu.edu/hiaper/archive/render/rendering3.jpg

Now the isosurface and the mesh appear to be aligned properly with the grid, although it now thinks the volume extends to 11 in x and y (indicated by the light gray shading of the volume walls.

So, I think there is something wrong with the rendering or mesh coordinate calculation. Can anyone show me the error of my ways?

Ken

P.S. At least this may provide a workaround, but I still need to be certain that my data is displayed in the correct place in the data coordinates.