Subject: Re: tetra_volume - clarification, details?
Posted by karl_schultz on Wed, 29 Aug 2001 15:54:35 GMT
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Vince Hradil <hradilv@yahoo.com> wrote in message news:<1103_999012226@lc960091>...
> I think I figured out how to use tetra_volume. I just need the vertices - easy enough - and the connectivity - not so easy. What I
> need is a 'tetrahedral mode' for mesh_obj to generate the connectivity matrix. Which would look something like
> [4,v11,v21,v31,v41,4,v21,v22,v32,v42,...,4,vN1,vN2,vN3,vN4], where vkj is the j-th vertex of the k-th tetrahedron (j={1,2,3,4}, k=
> {1...N}.

Actually, you need to leave out the 4's. All tetrahedra, by
definition, have 4 vertices, so the 4's are not needed.

> I think I can get this by brute force, but one would think that if IDL has a function like tetra_volume, it would have a
> function to generate the tetrahedra??

You're right, there is not much in IDL 5.4 to generate tetrahedra.
The TETRA_* functions are there to help people that are analyzing tet
meshes from another outside source.

There is some code in the example tetra.pro that generates tetrahedral
meshes for simple solid objects. But I don't think that this would
help much in your situation.

Extending MESH_OBJ to produce solid tetrahedral meshes is an
interesting idea. In the general case, when generating extrusions of
a polygon, the gridding code required to produce a tet mesh is very
complicated, and is well beyond the scope of MESH_OBJ. Code like this
is best implemented inside IDL.

>
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> On Mon, 27 Aug 2001 20:07:02 GMT, Vince Hradil <hradilv@yahoo.com> wrote:
>> Has anyone ever used tetra_volume and/or tetra_surface? Or any suggestions for something else?
>>
>> I am trying to measure the volume of a solid (uniform density) object given either (1) the vertices of the convex hull or (2) the
> voxels within the object [or (3) both 1 and 2]. I realize that I can just multiply the number of
>> voxels within the object by the voxel volume to get an estimate of the volume, but I want to see if I can estimate the volume
> better using the sum of tetrahedral volumes.
>>
>> Thanks in advance.

>>
>> Vince
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