Subject: 3D envelope surface around data points?
Posted by Eric Williams on Thu, 16 Mar 2000 08:00:00 GMT
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I was wondering if there was a way to take a set of data points (stars in a galaxy) that define an outer surface in 3 dimensions, and draw a surface that envelopes and includes the points. I haven't done much multi-dimensional plots in IDL so any tips and hints for trying this would be helpful.

Thanks
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Subject: Re: 3D envelope surface around data points?
Posted by James Kuyper on Thu, 23 Mar 2000 08:00:00 GMT
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Eric Williams wrote:
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> would be helpful.

What you're asking for is called the "convex hull" of a set of points. This is a famous difficult problem. There's a fairly straightforward algorithm that's very slow (O(N^3), IIRC), and no known algorithm that's much faster than the straightforward one.

I found a downloadable library <http://www.ee.byu.edu/~wilde/polyhedra.html> for dealing with polyhedra, that is said to contain C code for a convex hull function. I've no idea if it's any good, or even if it's what it seems to be, but you could try translating it into IDL.