Subject: Re: 4D visualization
Posted by David Fanning on Mon, 02 Oct 2006 17:23:20 GMT
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Leslie Welser writes:

> I need to visualize a parameter space that has 4 variables. Example: I
> have vectors a, b, c, d all of the same size. For a given triplicate
> (a[0], b[0], c[0]), the matching value is d[0]. I thought about using
> a modified ternary style plot (a triangle with a,b,and c on the axes)
> and then plotting the 'd' values in different colors, but this appears
> to be difficult with IDL. I was wondering if anyone else has an easier
> way to do this.

A 3D scatterplot would seem to be one easy way to do this:

http://www.dfanning.com/tips/scatter3d.html

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: 4D visualization
Posted by greg michael on Mon, 02 Oct 2006 20:44:49 GMT
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So do you have a+b+c=const? I think you need that for a ternary plot.
If so, I've got some old (and probably ugly - it was one of the first
things I did with IDL) code I could dig out for you which does this.
Actually, I want to use it again soon, so it might even get renewed.

The problem with a 3D scatter is that you have to animate it to get any
idea what it's showing. Unless you can put some depth effect into it -
maybe fog, or perspective, or a stereo anaglyph (Mike Galloy published
some nice code for that).

Greg

Subject: Re: 4D visualization
Posted by greg michael on Mon, 02 Oct 2006 21:36:05 GMT

oh yes - or with projection lines, as David shows...