Subject: Re: equally spaced points on a hypersphere?
Posted by Matt Feinstein on Fri, 29 Oct 2004 15:16:42 GMT
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On 29 Oct 2004 07:51:58 -0700, robert.dimeo@nist.gov (Rob Dimeo)
wrote:

> Hi,
>
> I would like to create (n+1) equidistant points on an n-dimensional
> sphere. The initial information provided is the center of the sphere,
> the radius, and *any* point on the sphere. From that you need to find
> the coordinates for the remaining n points. As a simple example,
> three equidistant points on a 2-dimensional sphere (a circle), can be
> located 120 degrees apart. Any hints on how to do this in general for
> n-dimensions?

Unfortunately, when you go to dimension greater than two, there are
constraints on the number of 'equidistant' points you can have on a
sphere. For example, in 3-D, there are (only) five regular polyhedra,
so n can only have the values 4, 6, 8, 12, and 20 for a tetrahedron,
octahedron, cube, icosahedron, and dodecahedron.

Matt Feinstein

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There is no virtue in believing something that can be proved to be true.