

Re: Integer tetrahedron

Source: <http://sci.tech-archive.net/Archive/sci.math/2005-10/msg01703.html>

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 - *Date:* Sat, 15 Oct 2005 23:32:35 GMT
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In article <1129343430.227295.193650@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>, "Dr Tim" <timrobinson@xxxxxxxxxxxx> wrote:

- > I think Klingons use this coordinate system.
- > Their scanner screens are marked with a triangular grid.

Yes, it's too bad that we are guided by goofy science fiction writers instead of science.

You could make a coordinate system from the whole to the parts, based on the closest packing of spheres, instead of building up from axioms or reference vectors: rack up a triangle of pool balls on a pool table and put a smaller triangle of balls on top of the big triangle of balls and then a smaller triangle on that one, etc., to make a tetrahedron of pool balls with five balls on each of the six edges, thirty five balls altogether. Bisect the edges by removing pool balls to make an octahedron and bisect the edges of the octahedron to make a cuboctahedron of thirteen balls. The four planes that defined the tetrahedron could move inward one layer of balls and meet at the origin of the coordinate system (4D) which is at the center ball of the cuboctahedron. Three of the four planes cut the bottom fourth plane if the fourth plane doesn't move from the origin to make triangles in the plane (3D) and two of the four planes define signed line segments (2D) if the other two planes do not move from the origin of the coordinate system. Look up closest packing of spheres on Google to see how everyone else starts with a coordinate system in mind before they do some packing and they are very confusing (CCP, FCC, HCP).

Somebody's got to rack'm up and show the process in graphics on the net with nice gleaming spheres and four translucent planes.

Cliff Nelson

Dry your tears, there's more fun for your ears,
"Forward Into The Past" 2 PM to 5 PM, Sundays,
California time, at: <http://www.kspc.org/>

Don't be a square or a blockhead; see:

<http://users.adelphia.net/~cnelson9/>

- **References:**

- ◆ **Integer tetrahedron**

- ◇ *From: Dr Tim*

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