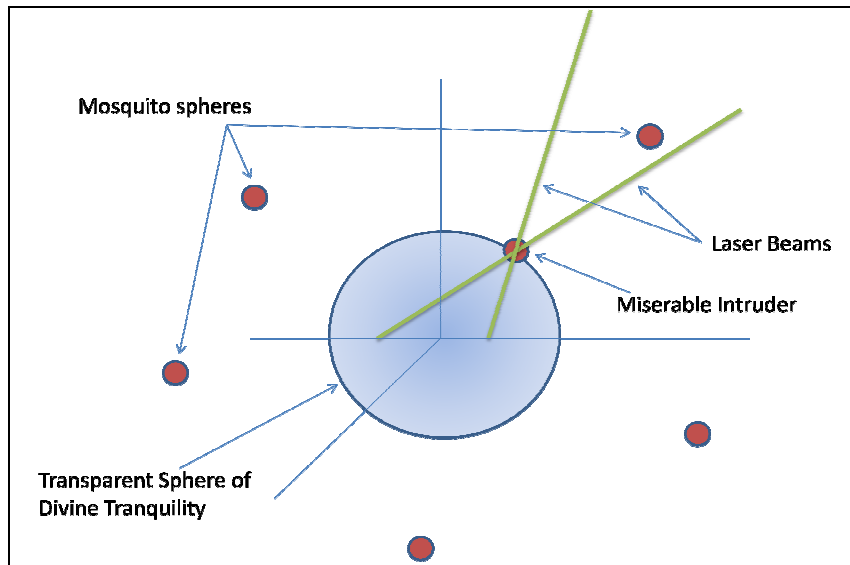


# Assignment: Laser Beam Sphere Repellent

Topic: Inverse Rotation Problem



Please program a setup of 20 randomly moving small spheres (let's call them mosquitoes) with an initial distance to the origin between 2 and 3 units. Make the spheres perform a random walk, i.e. add a random offset in  $x,y,z$  at each update.

Also draw a transparent sphere around the origin, radius 2 units.

If a mosquito enters the transparent sphere, i.e. its distance to the origin is less than 2 units, it should be zapped by two laser beams, which originate from the points  $P1=(-1,0,0)$  and  $P2=(1,0,0)$ .

Zapping a mosquito means: draw two lines, from  $P1$  and  $P2$  respectively, which cross in the intruding mosquito's position. The lines should be visible for 1 second. Drawing a line means create either a small, long cylinder or an arrow, which initially lies along a coordinate axis, and rotate it accordingly (that's the inverse rotation problem).

The mosquito, when zapped, should be relocated to a random position, again at a distance between 2-3 units to the origin.

**No given JME setup this time, but you may use any code from demos.**

Gain bonus points for visualizing real mosquitoes, spiders, UFOs etc!