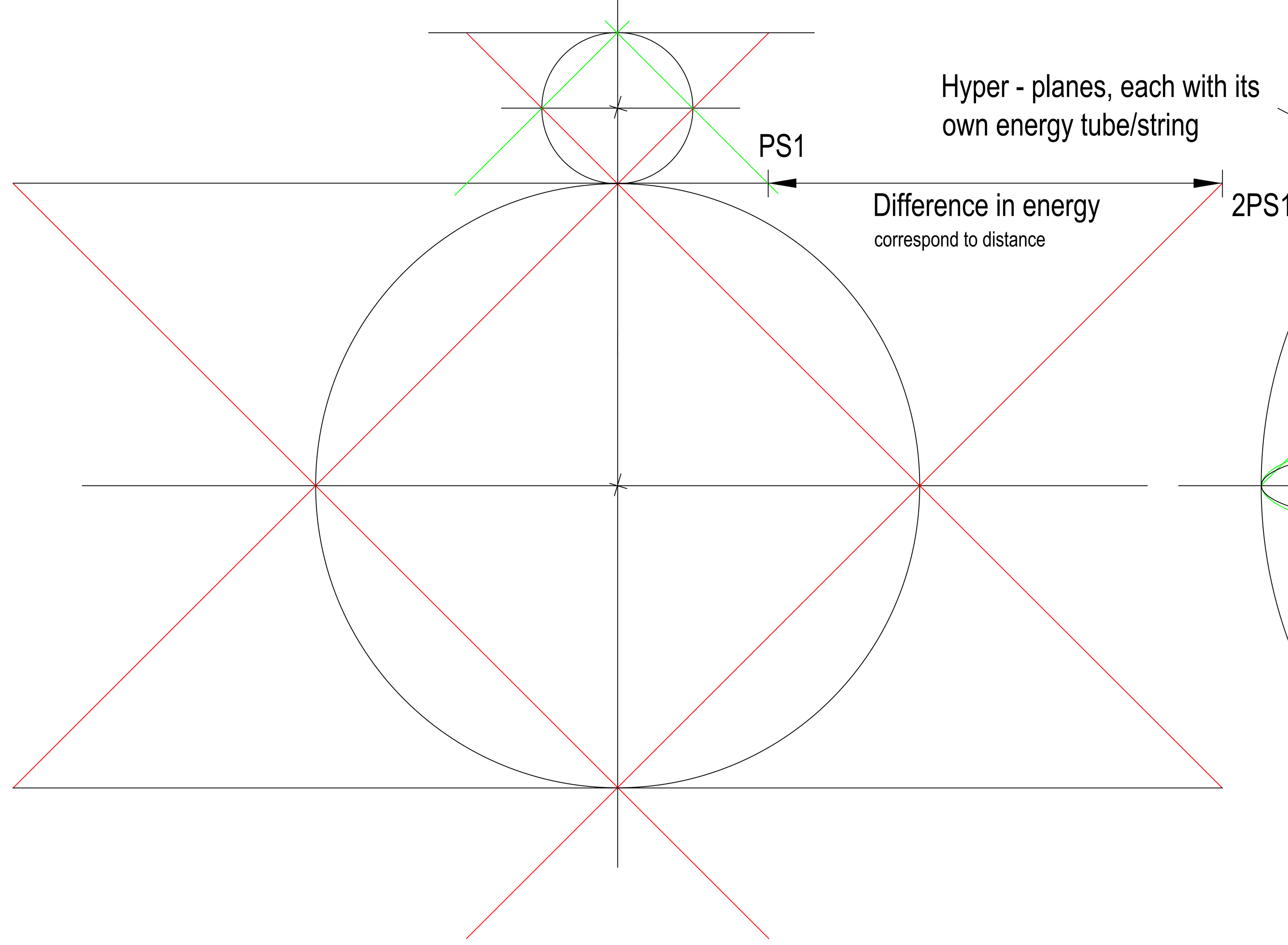
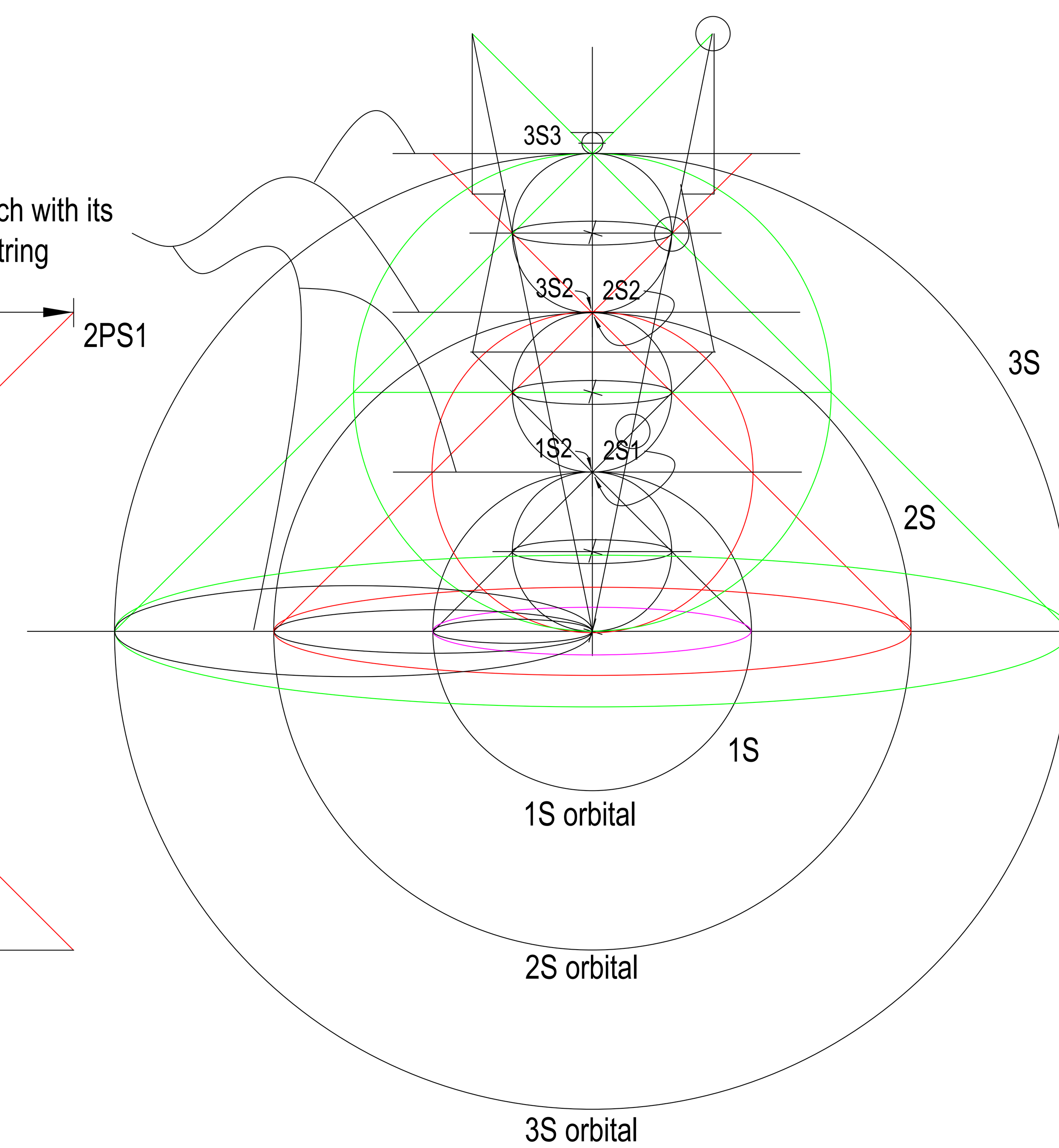
Atom (Single) with 3 Electrons and 3 Protons
Or (Double) 6 Electrons and 6 Protons

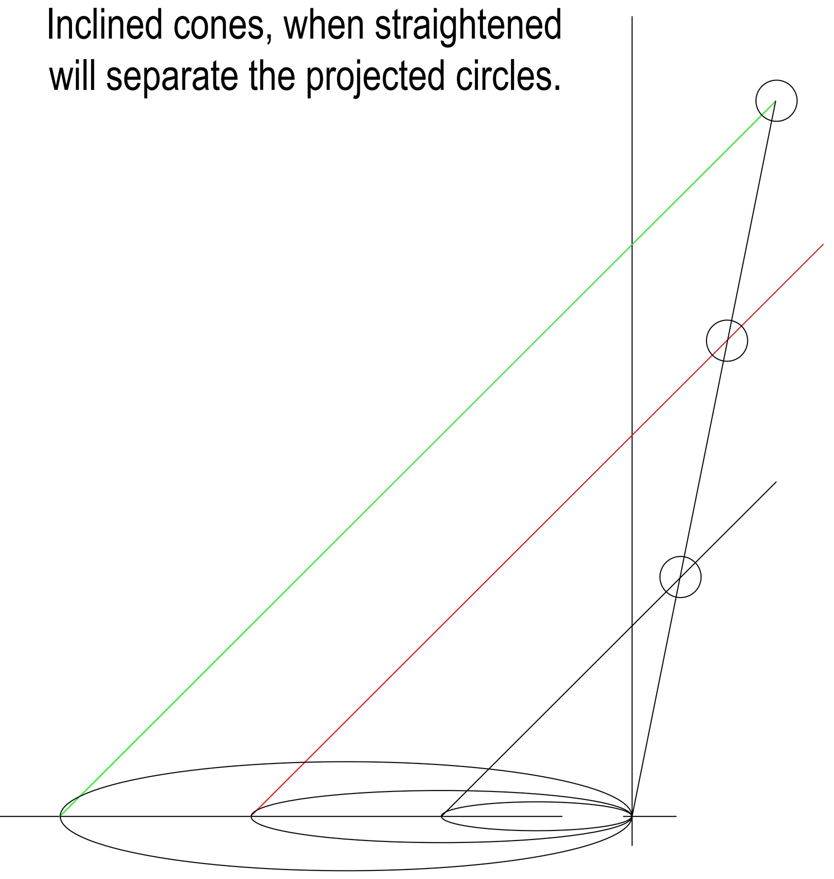
PS- designates pseudosphere. In this case we can directly add or subtract the energies.
PS1 = PS3 energy at level 3
PS1+PS2 = 2PS1



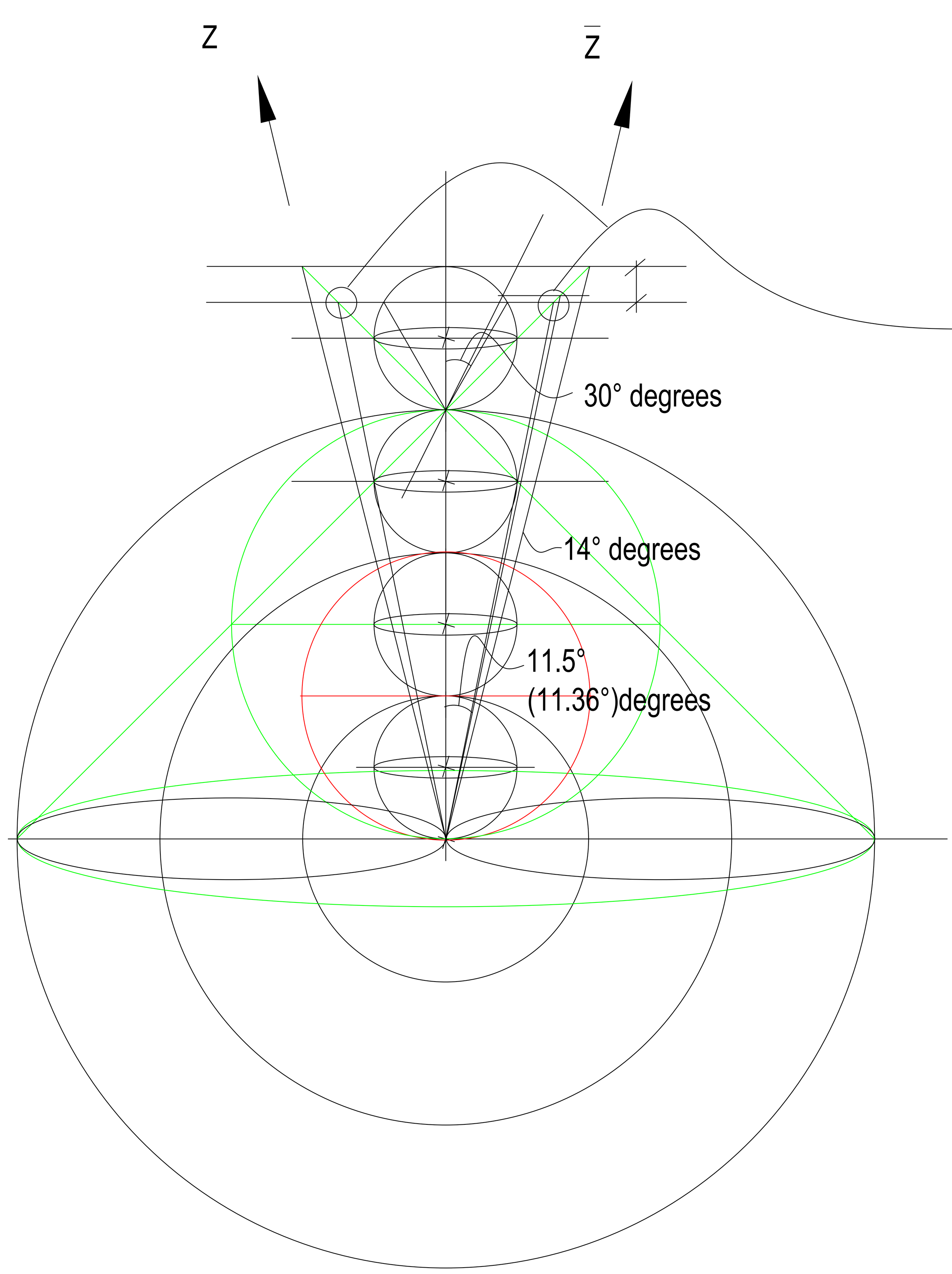
Atom (Single) with 3 Electrons and 3 Protons
Or (Double) 6 Electrons and 6 Protons - conjugates not shown



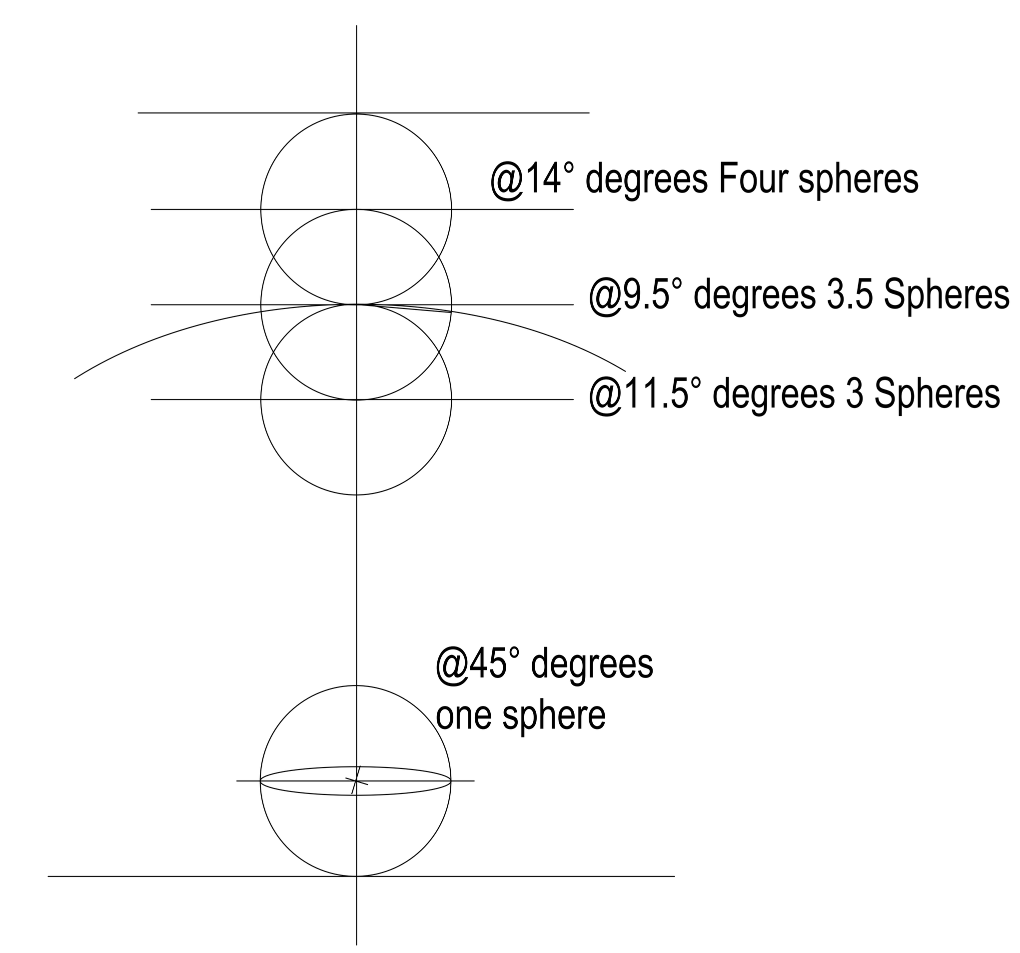
Inclined cones, when straightened will separate the projected circles.



Note that the heptagon has n!/2n = 7!/14 = 360 possible configurations which fall into:
(n-1)! - (n-1) / 2n sets.
[(7-1)! - (7-1)] /2x7 = 51 configuration groups, thus deviding the circle into 7 degrees!
The 51 groups of single electron multiplied by 2 = 102 elements of the periodic table with 2 electrons assigned to each orbital.
This amounts to 360 wave functions from n orbitals with single electron assigned to each orbital.
Arrange the table with double or single electron, and number of electrons and protons



External sphere has sunk in splitting the vertical axis (the particle and anti-particle have rotated in opposite direction) giving us two projection points.
when the vertical axis splits to 9.5°, the sphere has sunk in half way, similar to a projectile on the face of the larger sphere.
At 11.5 degrees, the sphere has sunk in all the way inside the larger sphere.
At 45° degrees the sphere is back down to its original sate.
14 and 13.25, there is 0.75 missing which has to do with whether we take the sphere on the interior or exterior. In the figure to the right we have four spheres 3 of which are inside the large sphere and one is on the outside.
14 - 11.5 = 2.5
we had 13.25 (1 /2 (26.5) related to golden ratio)
14 - 13.25 / 13.25 = 0.0566 , 0.0566 x 2 = 0.1132



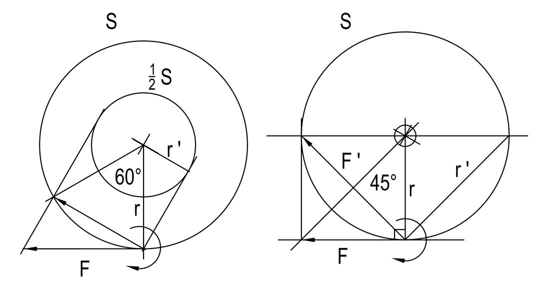
Particle in a Box Vs. Free Particle

Radius of new sphere after rotation by 60° on the sphere and 120° in space is one half the original.

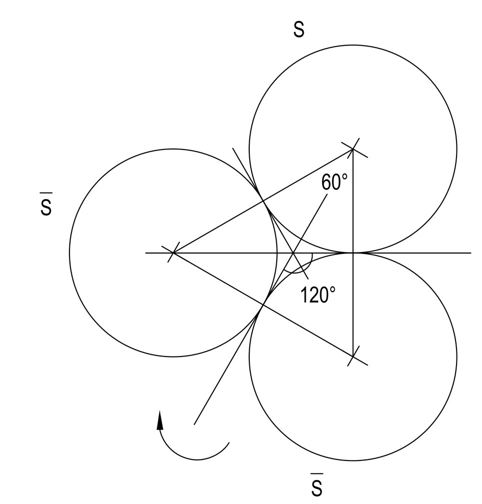
If we rotate the sphere 120° degrees on the sphere and 240° degrees in space, the sphere will disappear!!!

Like the sine or cosine curve. Note they are out of phase by 2.

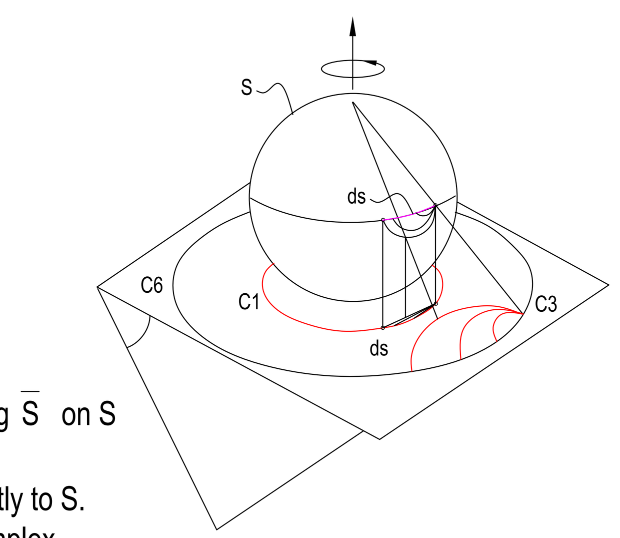
Determine distance, rotation, and size of molecules.



Rotate the force F and its perpendicular distance r to F' and r'. In the 60° case, the sphere reduces to $\frac{1}{2}$ its size and in the 45° case it disappears!



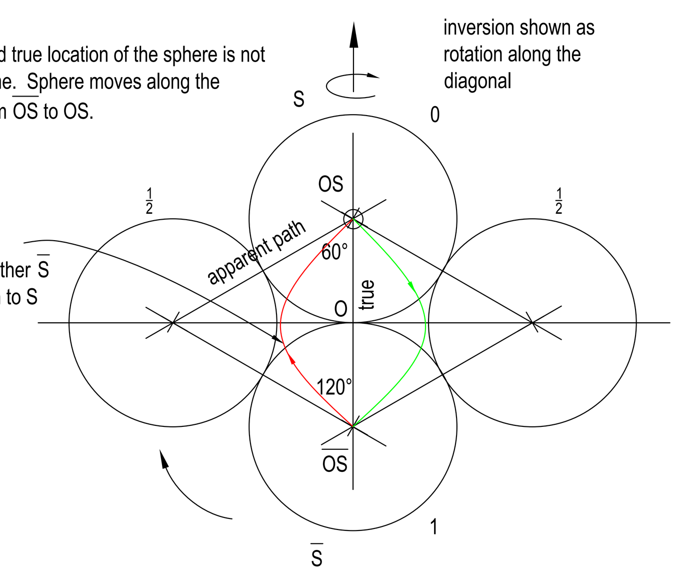
Split open the complex plane by 120° degrees, in essence rolling $\bar{S}$ on S by 60° degrees.
If we split open the complex plane by 180°, then $\bar{S}$ moves directly to S.
Say we split open the plane by 120°. Then projecting on the complex plane as shown to the right, for an angle of 60° from S, will give us the electronic orbital motion and spin of C6. The spin will be 180°, and C6 will reduce in size by one half.



Apparent and true location of the sphere is not and the same. Sphere moves along the diagonal from $\overline{OS}$ to OS.

inversion shown as rotation along the diagonal

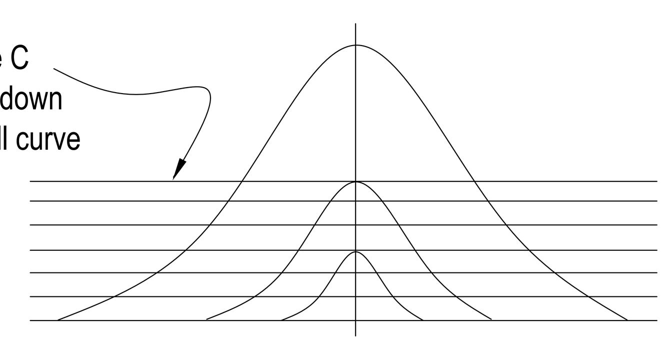
The wave and its conjugate will have different amplitude depending on whether $\bar{S}$ moves straight up or on a curved path to S



Plane inverts from zero to 1 and S (at zero) rotates on $\bar{S}$. Sphere will rotate about itself!

parabolic form of the complex plane.Conjugates C4 and C5 not shown - particle in a box

Complex plane C moves up and down forming the bell curve

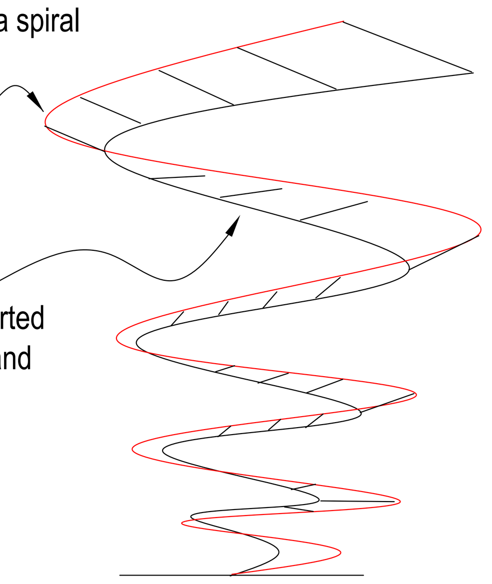


Parabolic form of the complex plane. Similar to the bell curve. Conjugates not shown. When we move up the sphere with circles parallel to the equator the complex plane bends with a single curvature similar to the figure above. Double equal curvature shown below, with a circular as opposed to an elliptical base, for when the planes are not parallel to the equator.

Start at the north pole on the sphere and move downwards on a spiral

Plane reverses by 180 at each 90 degree turn on the sphere

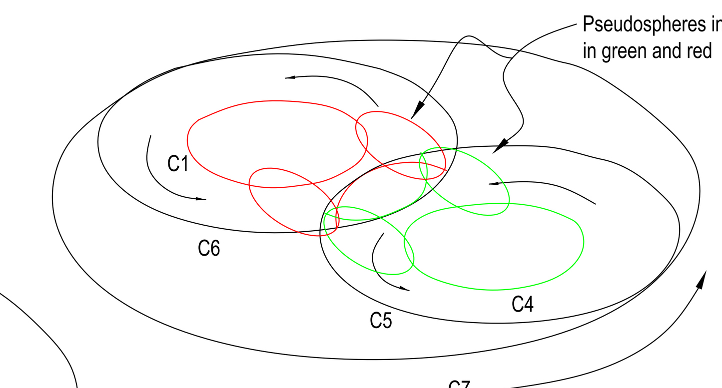
Spiral stair form of the complex plane is an inverted sphere.Conjugates, C4 and C5 not shown

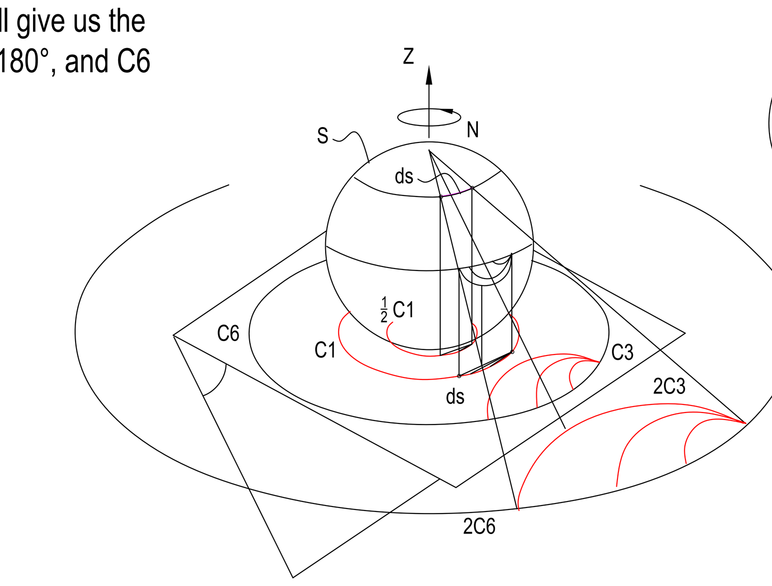


Mass reduced to zero at the equator

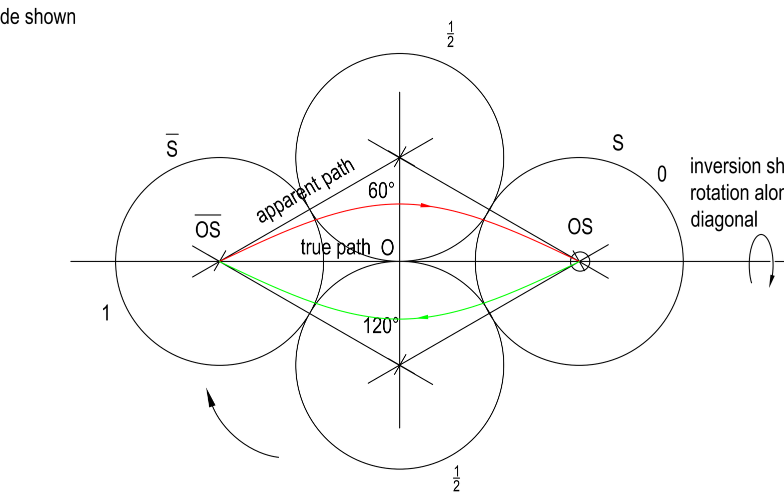
Behavior of the complex plane during Loxodormic transformation
Free particle

Pseudospheres inside shown in green and red





inversion shown as rotation along the diagonal



North pole is taken at the Z axis for the figure to the right. The complex plane relative to N moves up from C6 to C_0 .
If we move N along the Z axis down to $\frac{1}{2}$ C1, then the complex plane will move to C6($\frac{1}{2}$). N , in general does not move along a straight line. It moves down on S on a spiral. This is called Loxodormic transformation.

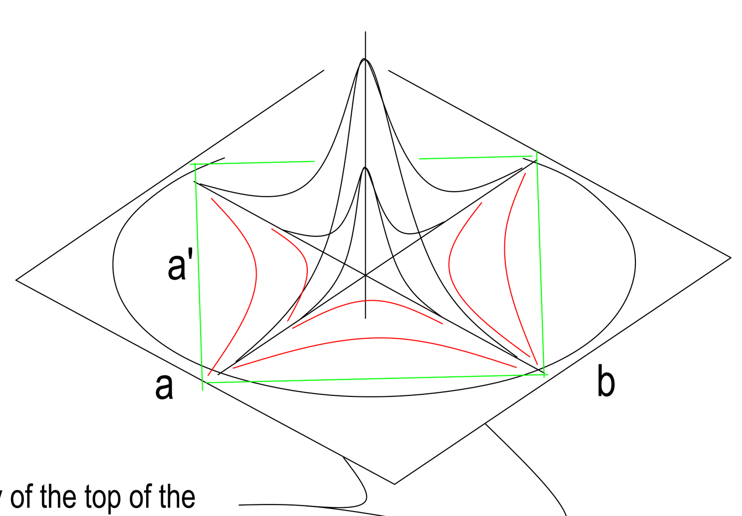
This is easy to see. The difficulty is in seeing what the complex plane does as N moves down on the sphere in a spiral fashion. We obtain a spiral stair in reverse.

Even more interesting is when we take N on three axes and create three spirals on the sphere and relate this to the hypersphere.

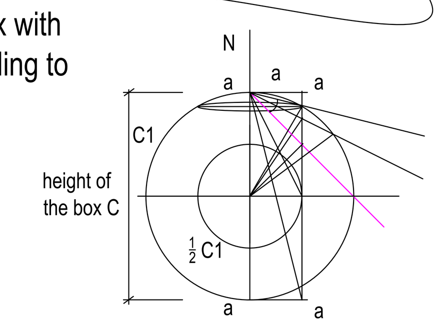
Take the north pole on the Y and Z or X and Z.

If ds is kept the same length then the curvature will be equal and the complex plane will curve into a sphere, all curvatures are equal.
To turn it into an ellipse, take two different lengths for ds projecting from Z and Y or X, find the difference of the two circles and obtain an ellipse.
For example from the Z axis we reduce the mass to $\frac{1}{2}$ C1 , while from the X or Y axis reduce the mass to $\frac{3}{4}$ C1.

7 particles of a single atom correspond to a heptagon
To picture the Oscillation and Rotation of the Molecule:
Take C1 (Sphere S) as the nuclei inside C7 as having what is called: Nuclear oscillation, nuclear rotation, and nuclear spin.
Then C6 has electronic orbital motion and electronic spin as C7 rotates on $\overline{C7}$.
This gives five functions, one describing the orbital motion of the electrons the second orientation of the electron spins, the third the oscillational motion of the nuclei, the fourth the rotational motion of the nuclei, and the fifth the orientation of the nuclear spins. For a detailed explanation see Introduction to quantum mechanics, article 43f, pg. 355

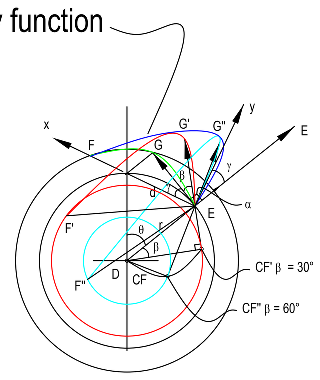


The boundary of the top of the rectangular or square box with sides a and b corresponding to ds (x), and ds (y) of the projectile

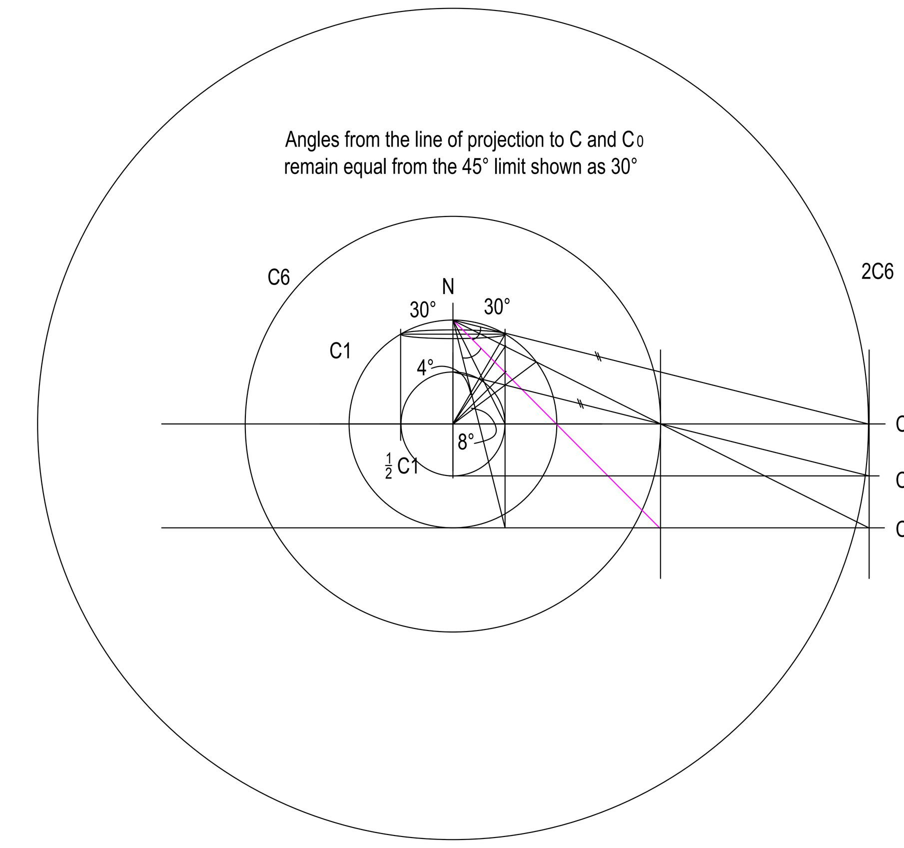


When we cross our vectors we obtain a rectangle, which is the top of the box, on the sphere. what happens at the boundary?
Rotate and enlarge the green rectangle.

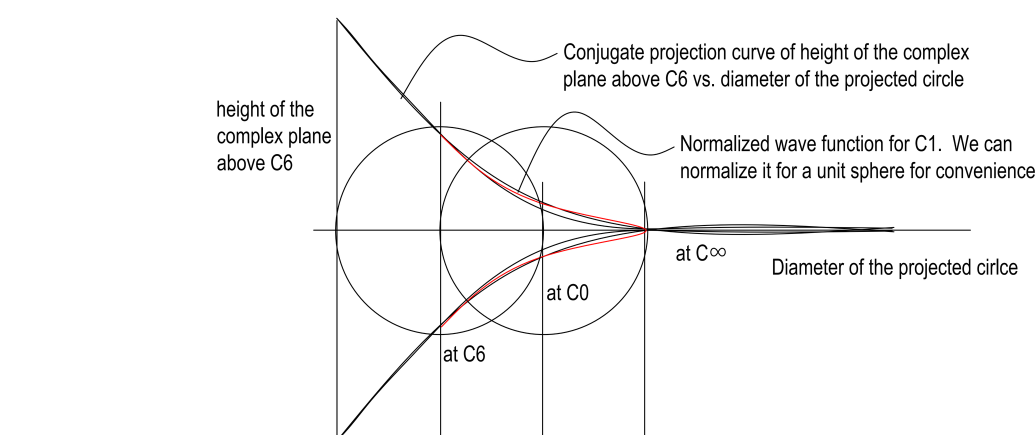
potential energy function



It will be more convenient to invert the potential energy function, as shown in many text books.



Plan and section shown on the same diagram

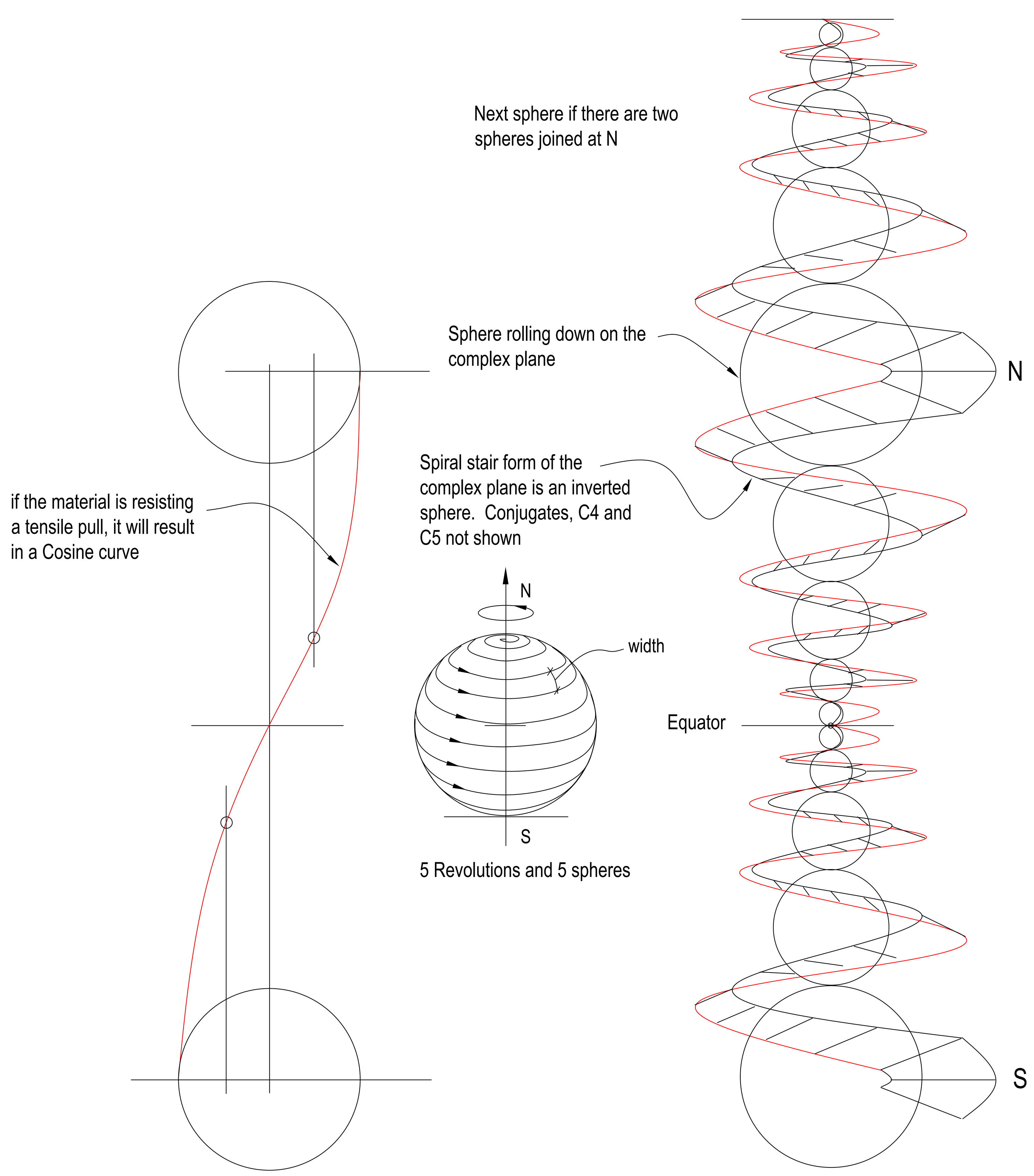


Plot of the height of the complex plane above C6 vs. diameter of the projected circle.
Axis of the diameter of the projected circle should move down to C0
Having this curve, we can determine the length of our segment on C1.

For two directions this would give us the inclination of a plane to the sphere and where we can derive its normal.

Free particle - Take N on three different axes, X, Y, and Z, with three different zpheres. Rotate each N on each axis down the axis of its sphere in an spiral fashion towards the equator. Relate this to the hypercube.
This will give us the nine dimensional space.
If each axis represents a property, T, A, G for example, then performing this operation on each sphere on the axis will give us a means to categorize the properties like for example the human genome.

Form of the complex plane for a Free Particle - Quarks and Anti Quarks

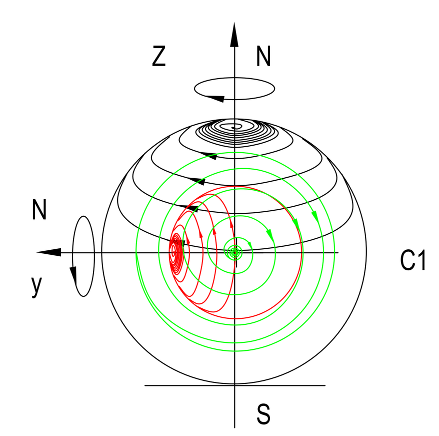


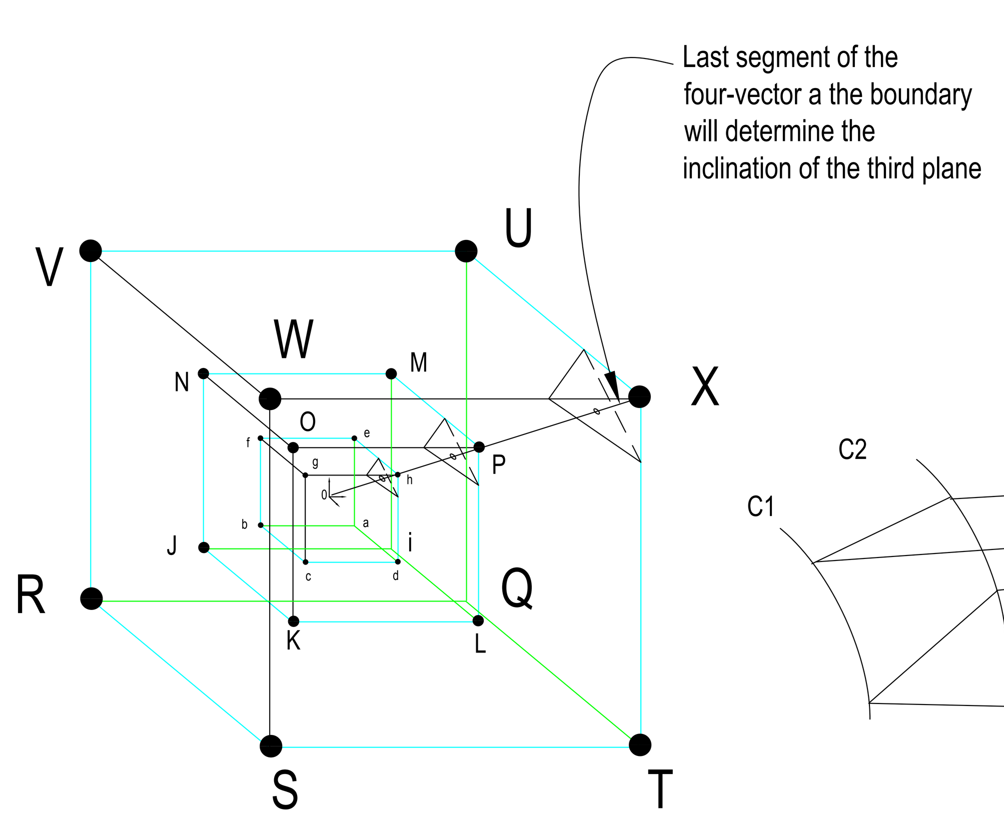
From infinite number of curves or wave functions such as the one shown above we can identify our curve.

Four spheres in space will provide a convenient way of forming a volume. Instead 2 spheres of 3 quarks and 3 antiquarks for a total of 6, we have four spheres of 3 for a total of 12. The six tubes will increase to seven or 12, with 7x7=49 to 12x7=84 particles.

We will have four hypercubes each with 256 constants, and the number of sontatns will increase from 256 to 1024.

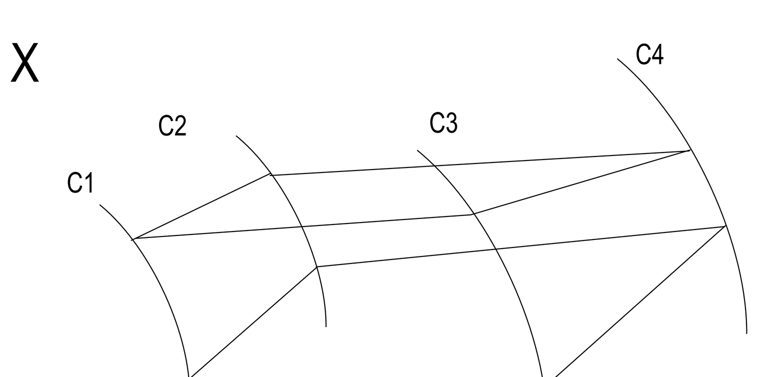
The figure to the right, with three spirals shown will have an average sum of a fourth sphere not shown.





Hyper Cube corresponding to a single sphere has three planes in each octant for a total of 24 planes. Planes shown on one octant at h, P, and X, in the figure above.

For three embedded spheres the hypercube would have 9 such planes in each octant. And for four cubes there will be 12 such planes.



For an analogy, rotating the north pole N down the sphere in a spiral fashion is much like peeling an apple.

The size of the knife and the width of the peel vs the size of the sphere. The smaller the width of the peel, the larger the sphere. Also the longer it will take to go around a given sphere. The unit sphere is taken for convenience.

After peeling the surface we can:

1. Stretch it, in the opposite direction of the "gravitational" pull, where matter is trying to pull back together.

2. Reverse it hence inverting the sphere, which is what the complex plane has done for us !

After peeling, let the peeled sufrace hang in the air. If there was no gravitational pull from the earth, the shape would remain like an apple, however because of the downward gravitational pull the form will stretch. Think of the force which has stretched the apple as an internal force which is trying to stretch the sphere. The sphere will then resisti with an internal compressive force trying for form itself in the shape of the apple. It will be like we have put a compressive force on the material. If we reverse the peeled surface, then it is as if we have put a tensile force on the material.

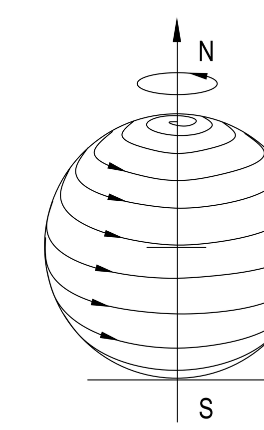
Changing the width of the peel, will result in a different Cosine curve, longer or shorter, or one with a lower or higher amplitude.

Lets call this the periodicity of the complex form.

Given this one sphere, we can then generate an infinite amount of waves or spheres depending on the width of the peel.

Our given ds, or length of the projectile, then fall in any category. If we are also given the potential energy function and size of the sphere from which it was obtained, we have an initial sphere say S which is then reduced in size say to $\frac{1}{2}$ S. The problem is solved for the unforced, undamped oscillator. From the infinite spheres we are given the one. From the function we know the size is reduced by 1/2.

Rotating the figure to the left in space, and hence our sphere shown on the right is not the same thing as taking three different spheres with N taken on each axes and performing the operation.



Lets take the apple and peel it from the equator up ever so close to the north pole and decrease the size of the knife or width of the peel so that we have a string right before approaching the north pole. At this point we are traveling with the speed of light.
If we keep rotating in a spiral fashion near the north pole, with a width equal to a string, in effect we have our complex plane peeling a cylinder with a diameter ever so smaller than the sphere.

Next we rotate this cylinder in space.

We can do multiple wraps at any hight above the equator we wish hence in effefct peeling a string, at the speed of light, from a cylinder with a diameter of our choice.

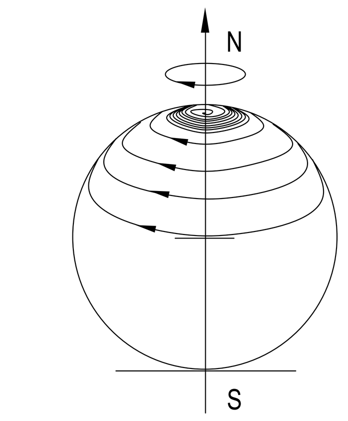
Rotating this cylinder in three dimensional space and increasing its length with the number of wraps, which will be many! we can in effect create holes and go in and out of our sphere !!! This is referred to as a Magnetic Monopole.

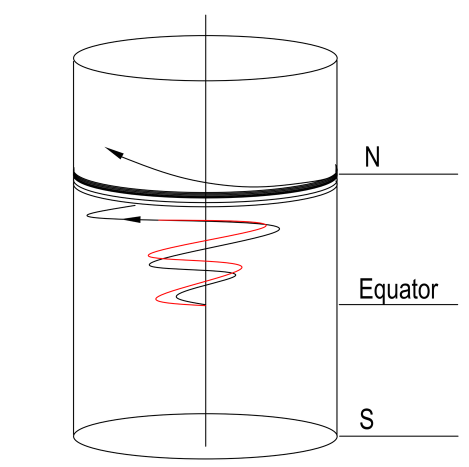
Generate a cylinder of diameter d p , inside the sphere S. Place a sphere with the diameter equal to d p , and place it on the equator. At the height above the equator of sphere S decrease the width of the peel to a string and wrap it around S. The complex plane will generate a cylinder at the north pole of the sphere dp, $\frac{1}{2}$ dp above the equator of S .

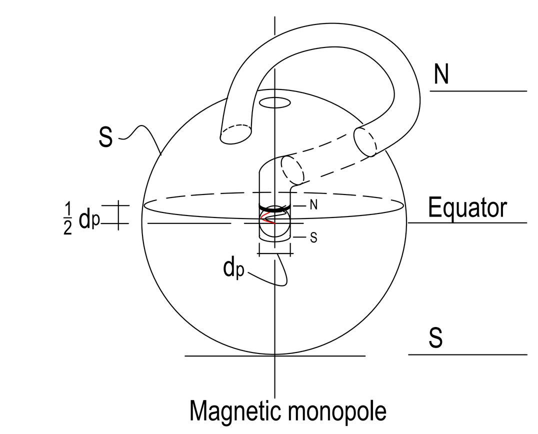
The height of the cylinder will equal to the diameter of the sphere dp. Once the cylinder is generated, continue wrapping the string about the cylinder to increase its length and guide it along any path in space.

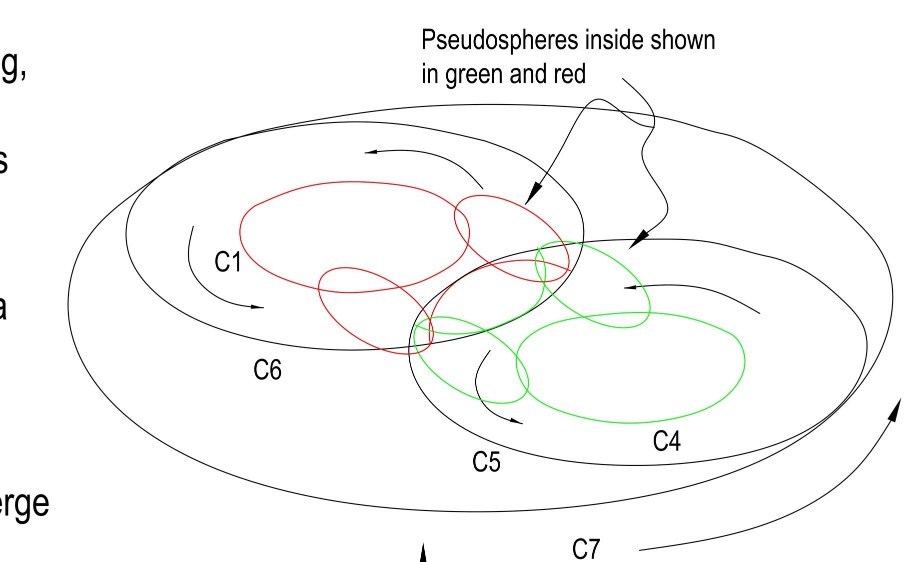
There will be two such cylinders formed inside the sphere corresponding, C1 and C4, and the two pseudospheres.
if we take C1 and C4 as composed of 3 Spheres each, call them quarks and anti-quarks, then we have a total of six cyliners! or pseudospheres.

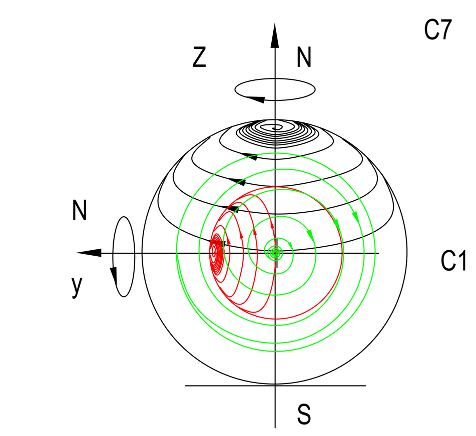
If Seven particles are taken on each pseudosphere then this results in a total of 42 particles, 21 for quarks and 21 for antiquarks.
For four spheres we would have 84. And the number of constants will increase from 256 to 1024.
When C5 and C6 are tangent, then the three quarks and antiquarks merge into one.
At this point, the complex plane should form a sphere.
If we take If we take C1 and C4 as composed of three spheres then C1, and C4 will each have three hyper cubes, and instead of three surfaces we would have 9 surfaces on each octant. If we take four spheres C1 to C4 each composed of 3 spheres, then we would have 12 planes.
In other words, we are simultaneously peeling the apple from the north pole of the X, Y, and Z axes respectively, with different size kinfes and or widths. The apple could then be composed of one sphere if the size and width of the peel is taken equal in all directions and could be of different sizes if the size and width of the peel in the three directions varries.



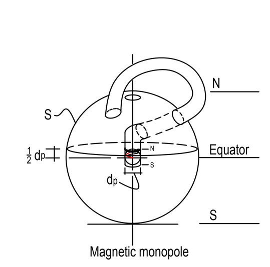


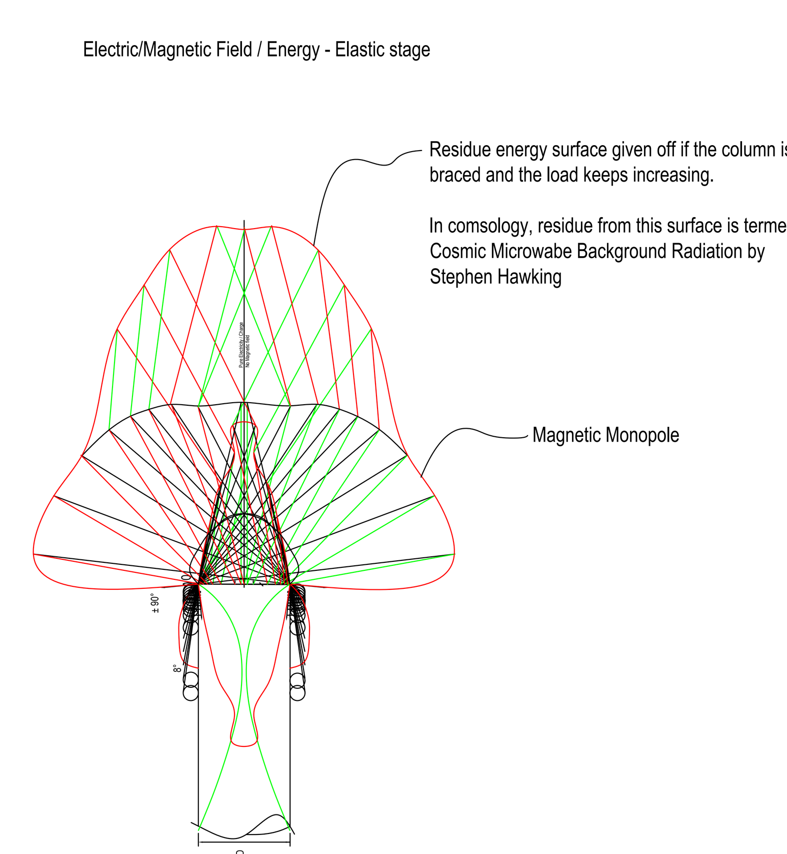


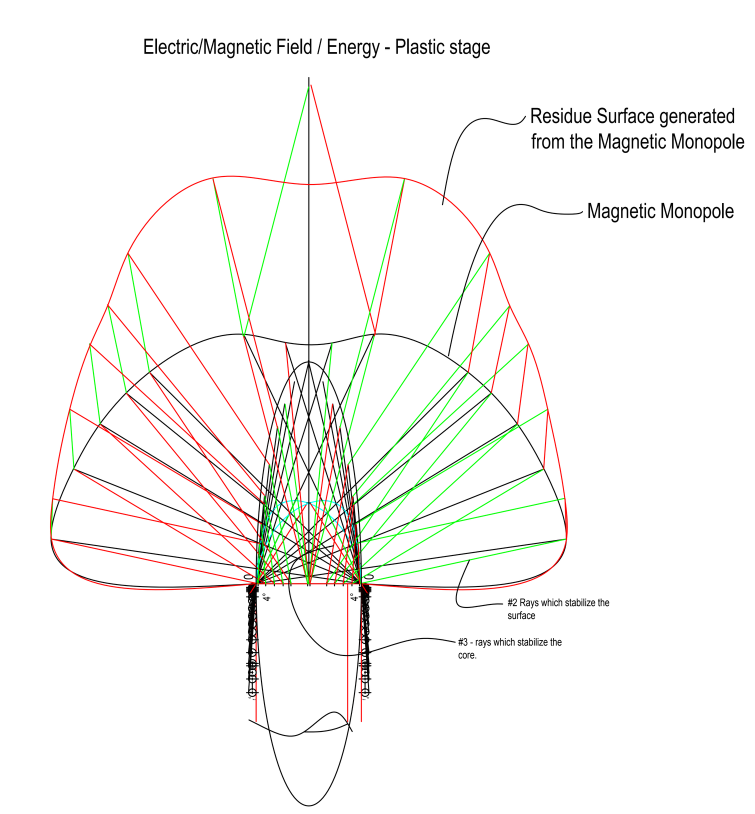


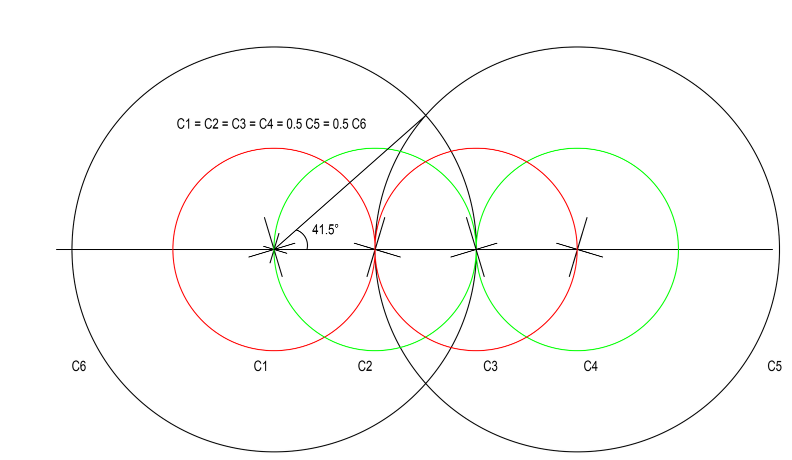


Magnetic monopole in three dimensions and 3 embedded spheres would result in a hypercube with 9 planes. Taking the sum of the spheres as the fourth this will result in a hypercube with 12 planes.

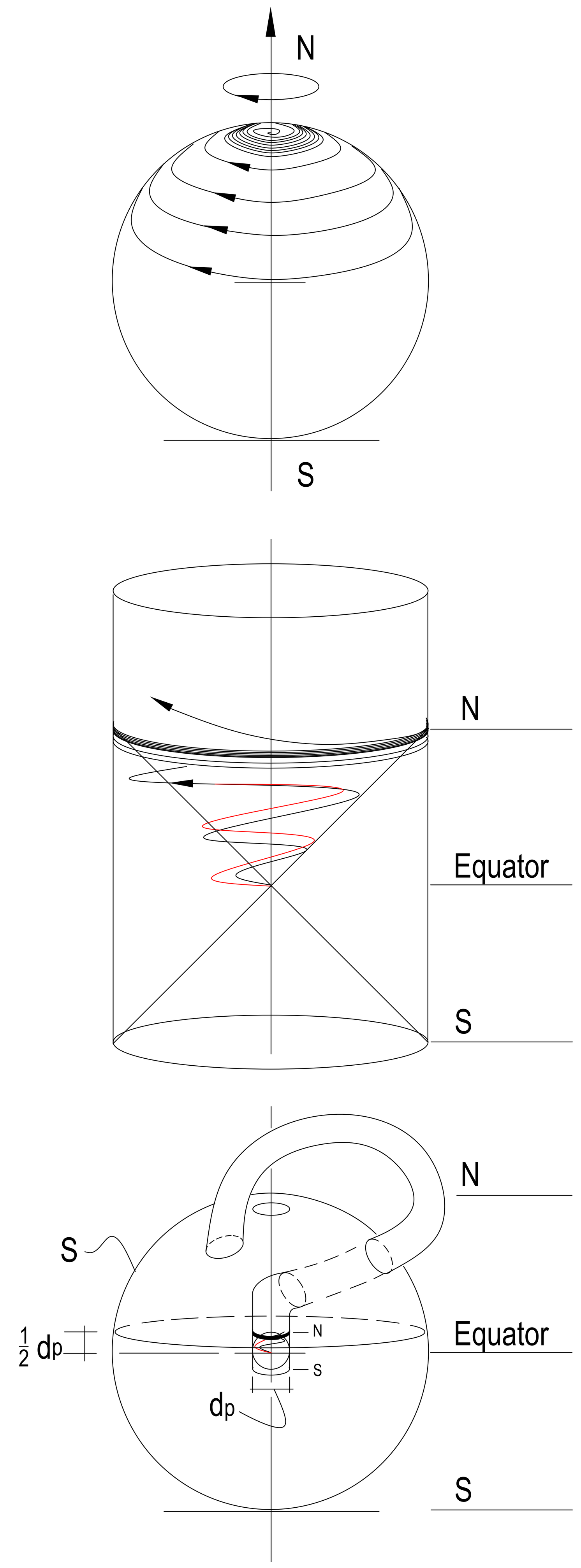






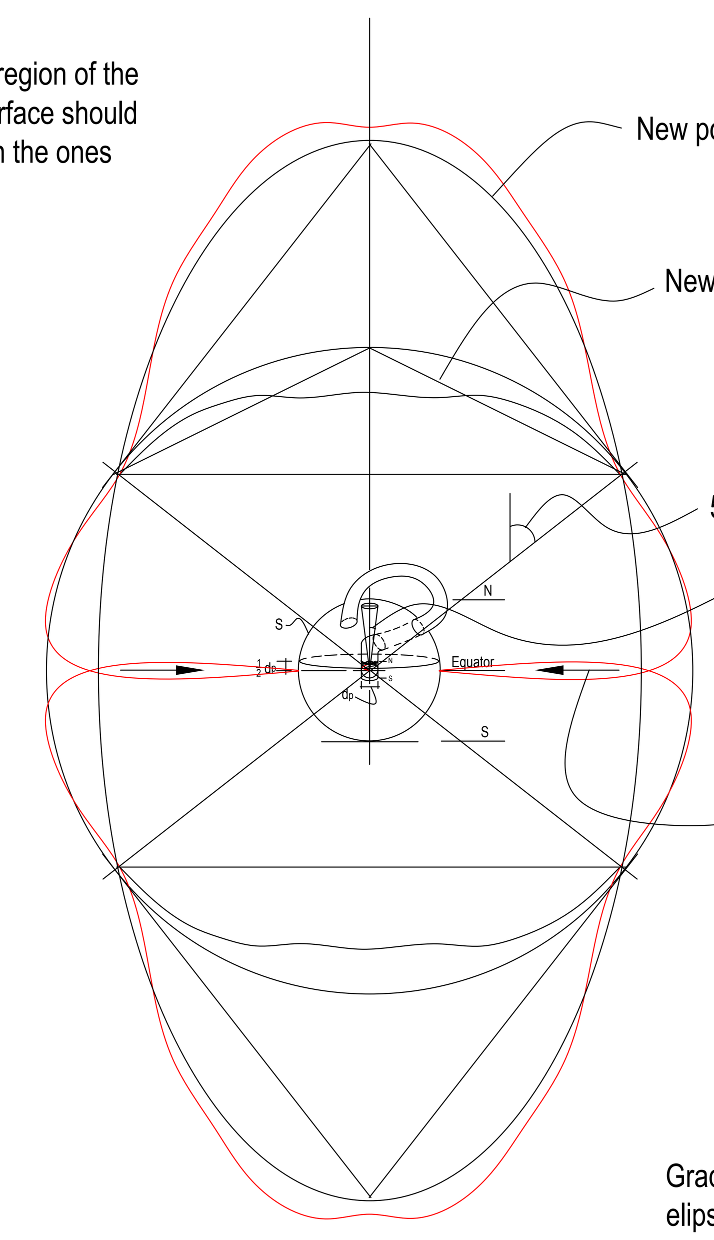


Magnetic Monopoles



Magnetic Monopole

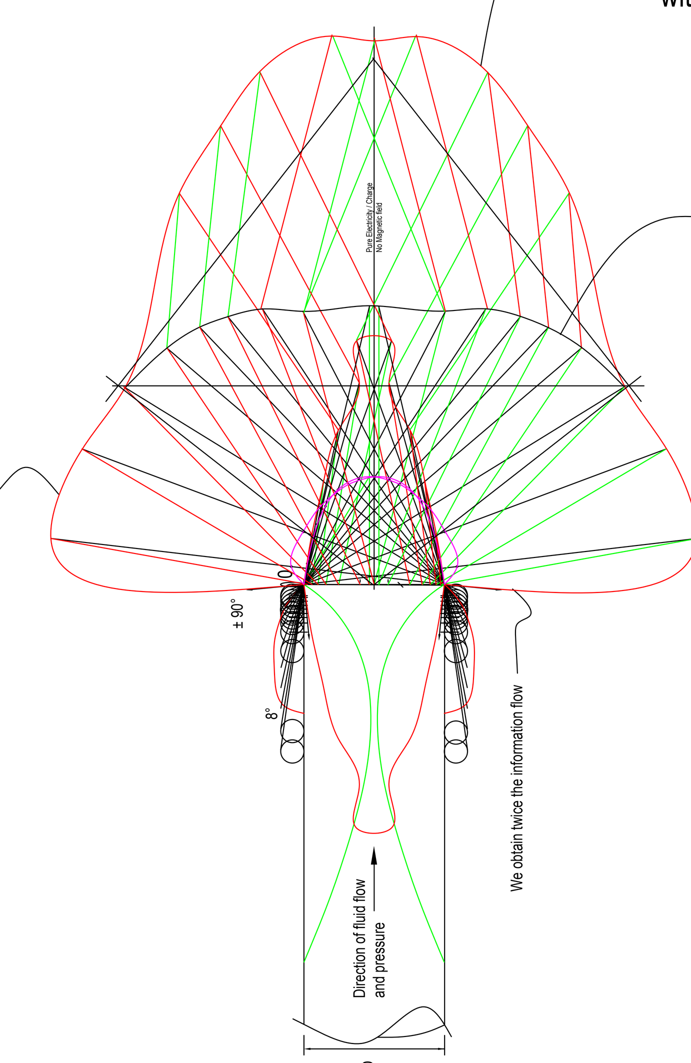
Radii of Particles in the region of the new potential energy surface should be 40 times smaller than the ones inside the quark



Dipole

Gradual change in shape of the magnetic dipole into an elipse. To slow down or prevent this change in shape one could build two accelerators above or below the equator at 51.5 to 55 degrees.

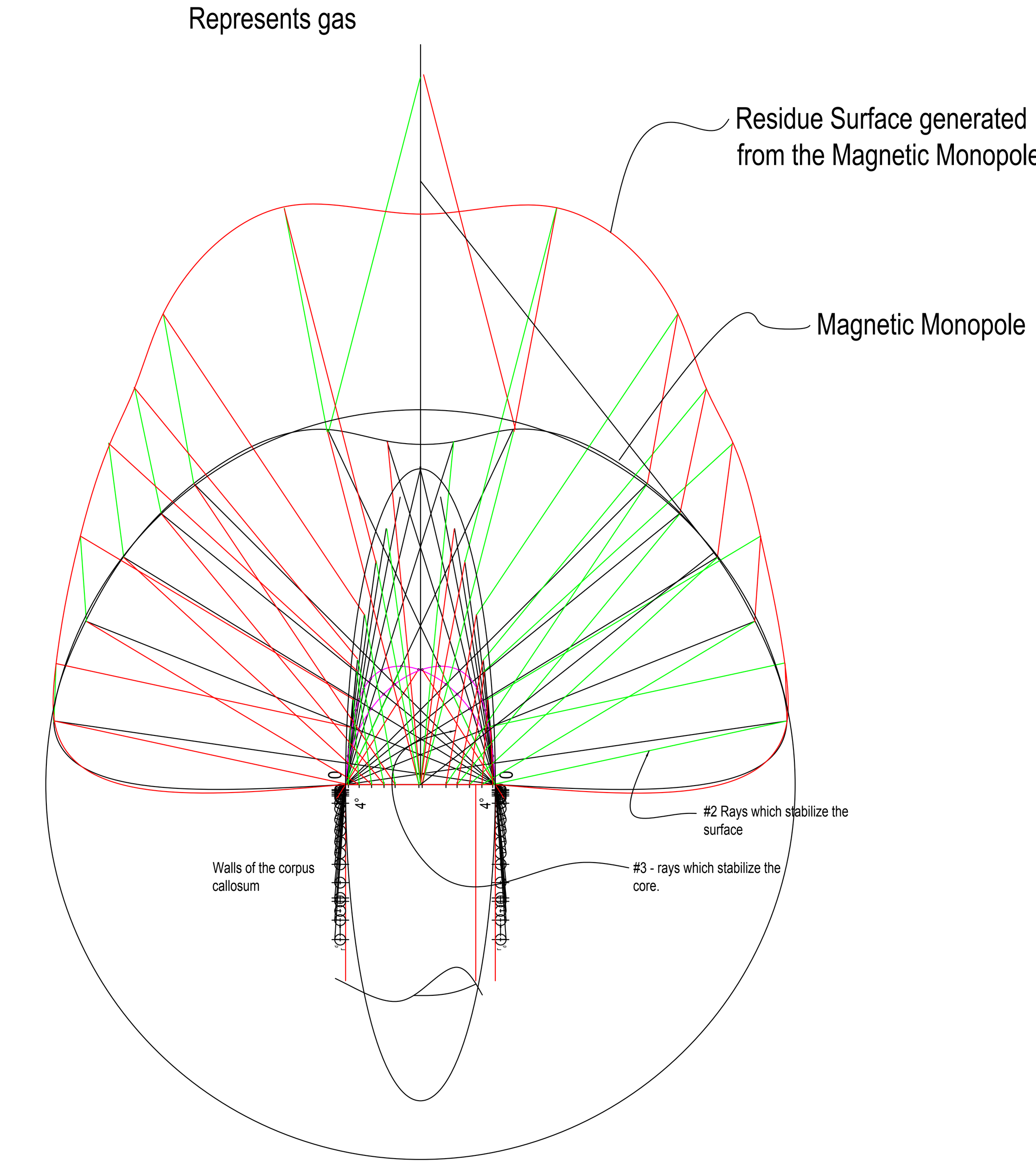
Electric/Magnetic Field / Energy - Elastic stage
Represents a solid as opposed to gas



Monopole

4° segment would result in a 100 fold increase in the diameter of the sphere dp

Electric/Magnetic Field / Energy - Plastic stage
Represents gas



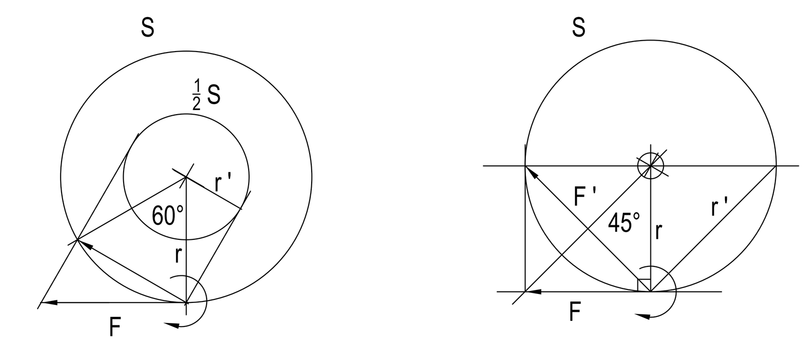
Inversion of the complex plane , Energy and Angular momentum (Copy)

Radius of new sphere after rotation by 60° on the sphere and 120° in space is one half the original.

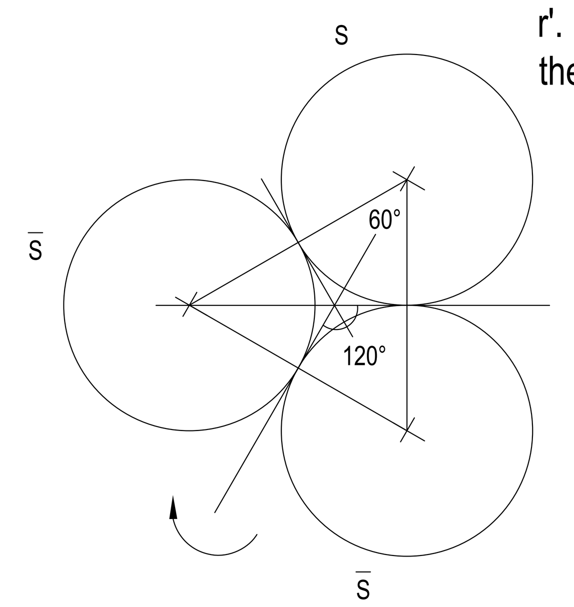
If we rotate the sphere 120° degrees on the sphere and 240° degrees in space, the sphere will disappear!!!

Like the sine or cosine curve. Note they are out of phase by 2.

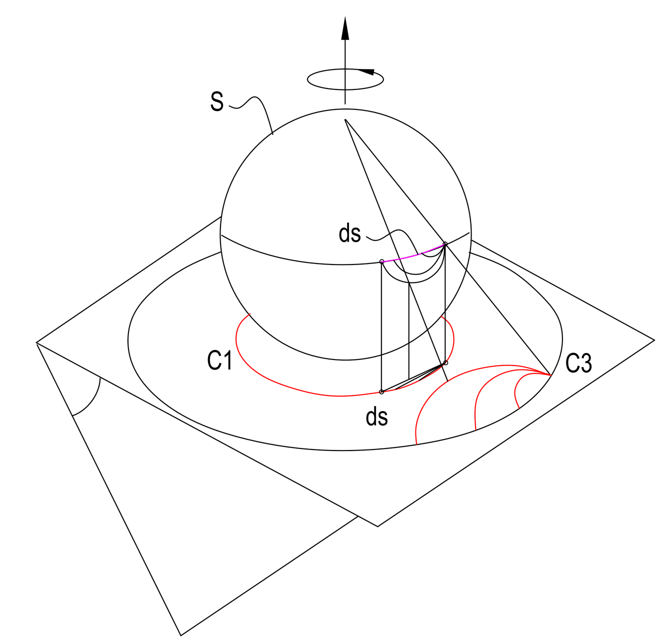
Determine distance, rotation, and size of molecules.

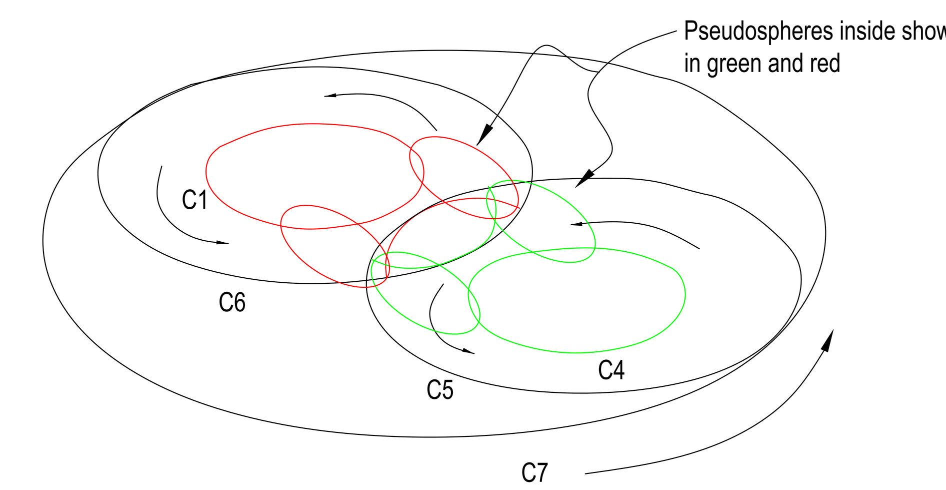


Rotate the force F and its perpendicular distance r to F' and r'. In the 60° case, the sphere reduces to ½ its size and in the 45° case it disappears!

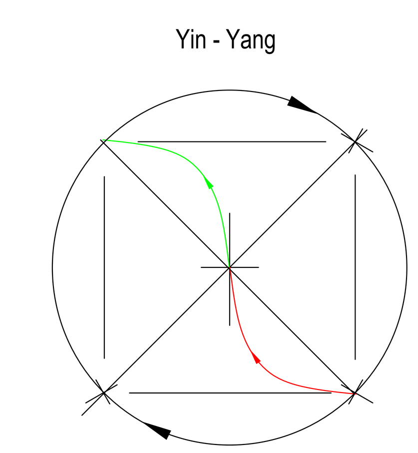


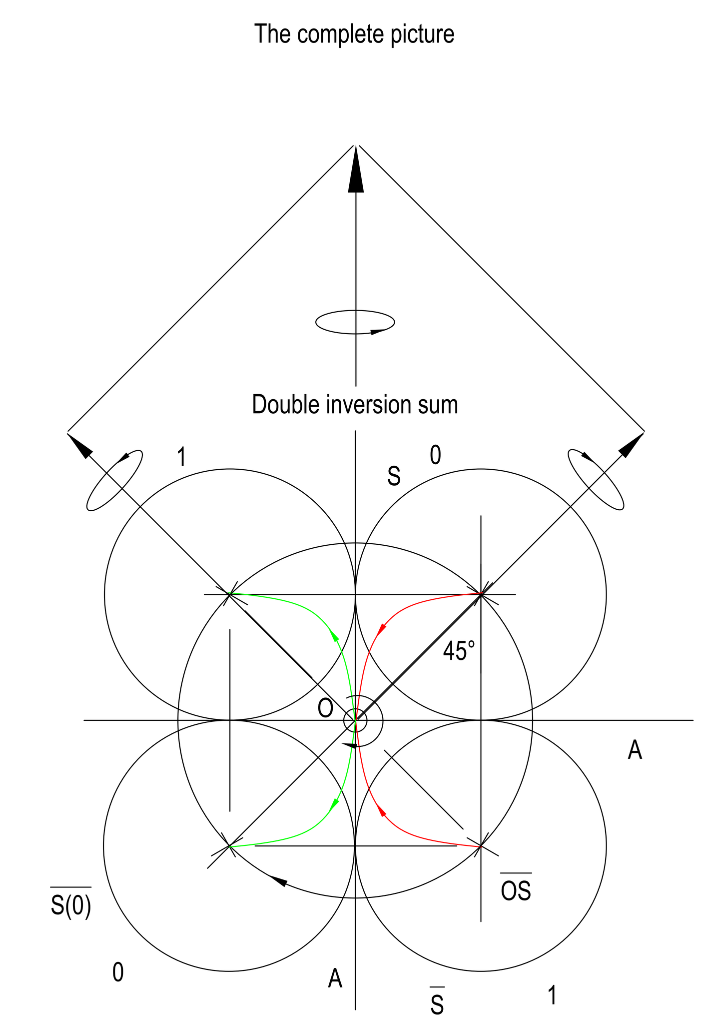
Split open the complex plane by 120° degrees, in essence rolling S̄ on S by 60° degrees.





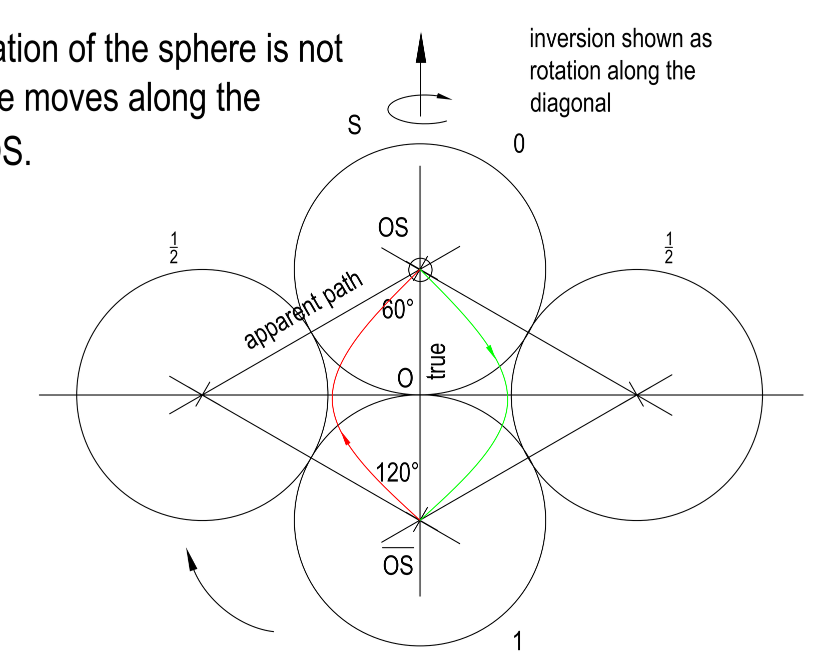
Rotate the sphere 90 degrees on the sphere and we have opened up the complex plane by 180. Again, a difference in phase of 2 (Bottom right)
In essence, rotate OA about O.
When we rotate 90° degrees in space and 45° degrees on the sphere, our sphere disappears, as its ratius decreases to zero. At this point we reverse the plane.
Note: during rotation S and S̄ reverse.
Take the bottom left figure. S̄ rotates on S to zero. Then from zero to 1 /2 S rotates on S̄ .
Also if the particles were to slide on one another and rotate, we would obtain the figure to the right. vise versa.



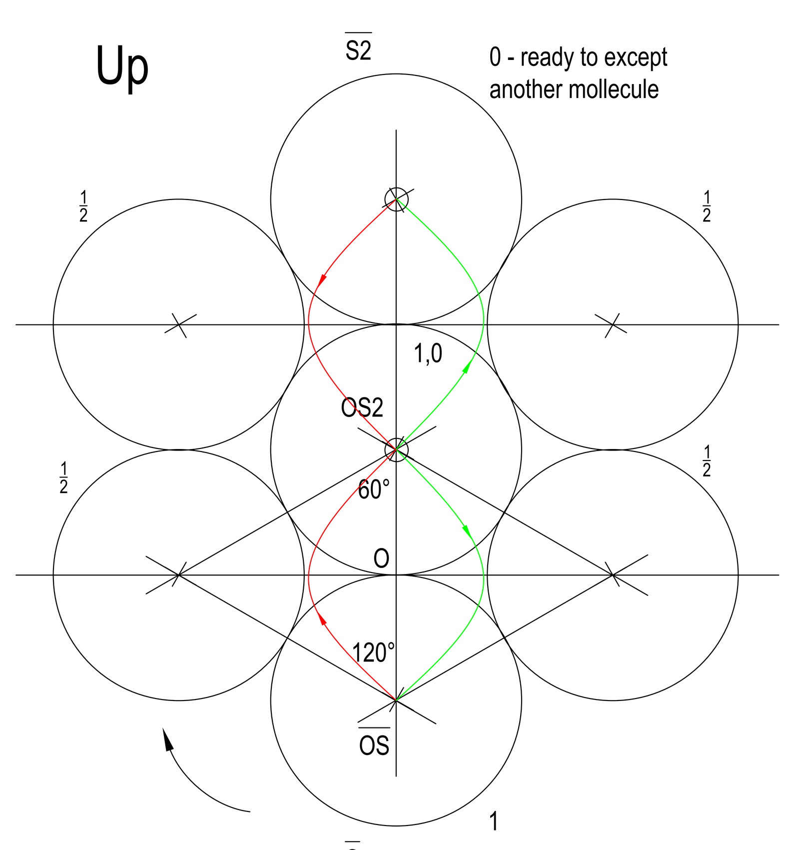


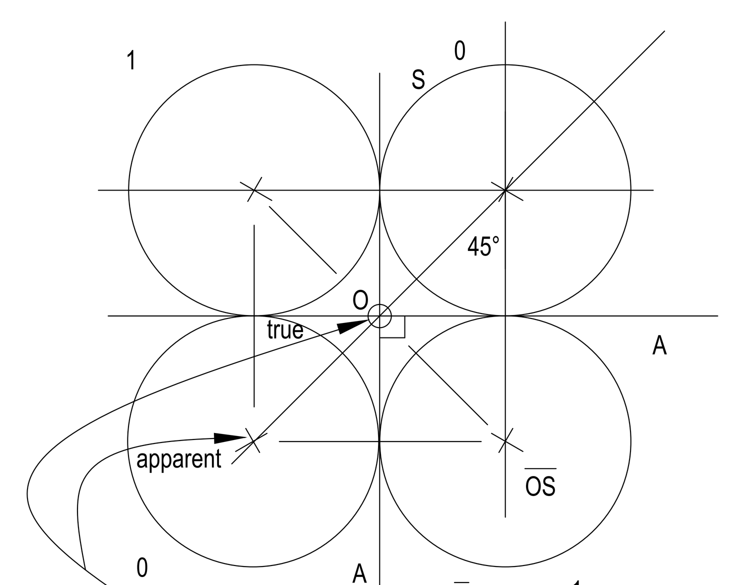
There will be a double inversion sum and cross product pointing into the board. The figure shows how a sphere would spin in three dimensions. This is the basic principle behind Penrose diagrams.

Apparent and true location of the sphere is not and the same. Sphere moves along the diagonal from O̅S̅ to OS.

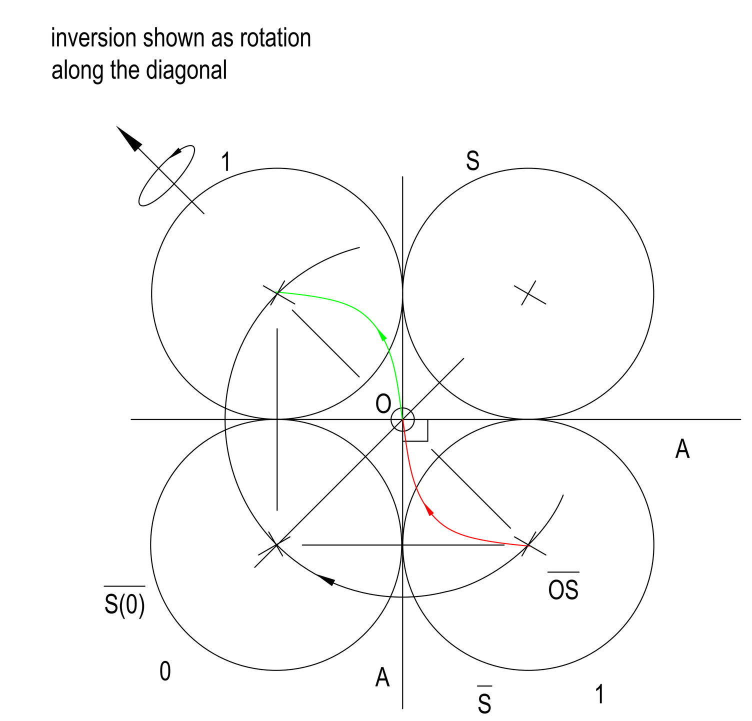


Plane inverts from zero to 1 and S (at zero) rotates on S̄ . Sphere will rotate about itself!

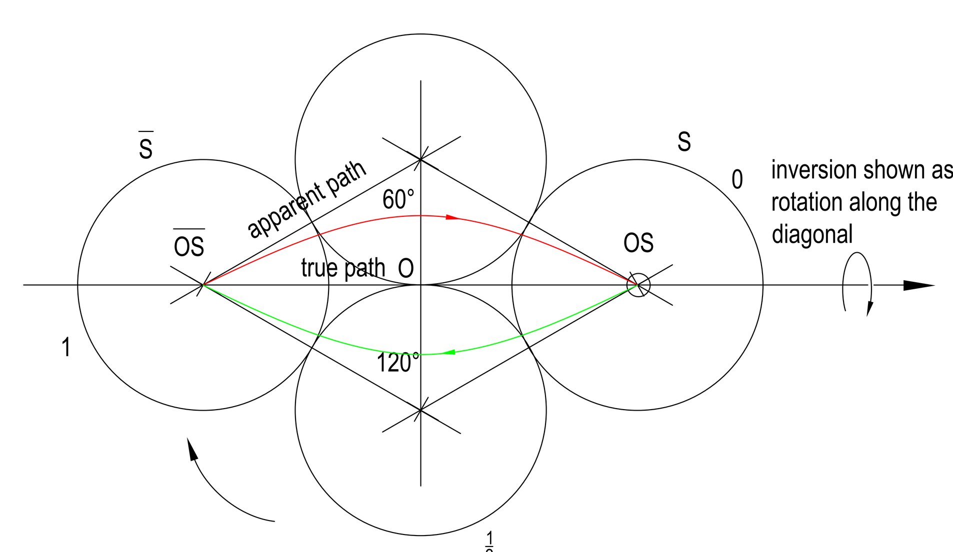


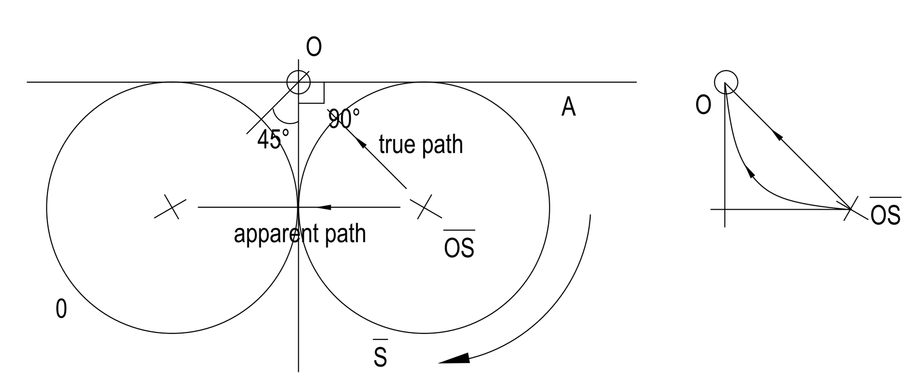


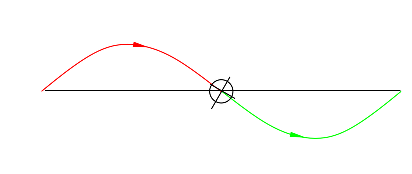
Apparent and true location(at O) of the sphere while the sphere may seem like it is traveling on a square, it is actually going along the diagonal O̅S̅ to O !!! Actually it travels along the curved path shown bottom right.



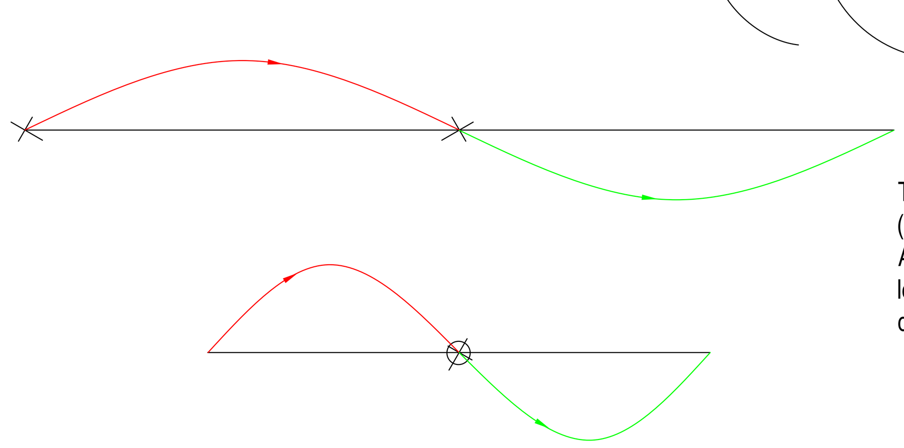
Plane inverts from zero to 1 and S (at zero) rotates on O as S̄(0) has shrunk to zero.
Magnitude of the forces keeping the mollecule together is equal to the diagonals, from the center of the sphere to O. As the particel spins around itself, its plane is inverted two times.







Cubic - Rigid - Shorter period
Isotropic - the two diagonals of the square have the same length.



Trigonal/Hexagonal - Elastic - Longer period (wavelength)
Anisotropic - the two diagonals do not have the same length and the material has different properties in two directions