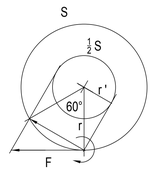
Yin-Yang , Inversion of the complex plane , Energy and Angular momentum

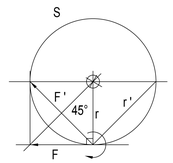
Radius of new sphere after rotation by 60° on the sphere and 120° in space is one half the original.

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

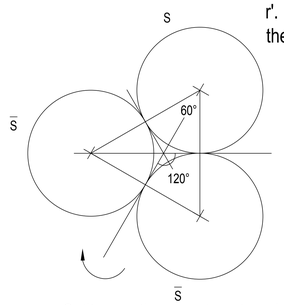
Like the sine or cosine curve. Note they are out of phase by 2.

Determine distance, rotation, and size of molecules.

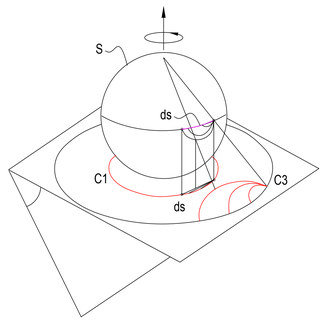


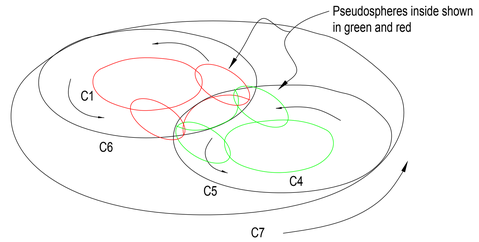


Rotate the force F and its perpendicular distance r to F' and r'. In the 60° case, the sphere reduces to ½ its size and in the 45° case it disappears!



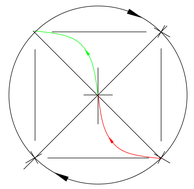
Split open the complex plane by 120° degrees, in essence rolling S̄ on S by 60° degrees.



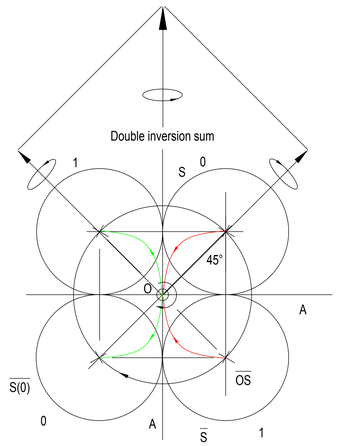


Rotate the sphere 90 degrees on the sphere and we have opened up the complex plane by 180. Again, a difference in phase of 2 (Bottom right)
In essence, rotate OA about O.
When we rotate 90° degrees in space and 45° degrees on the sphere, our sphere disappears, as its ratius decreases to zero. At this 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.

Yin - Yang

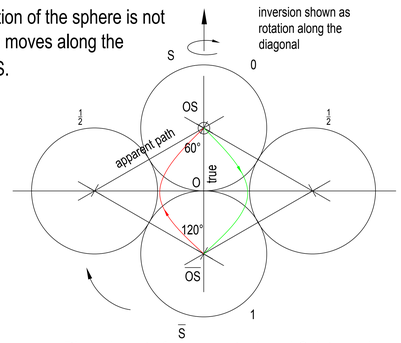


The complete picture

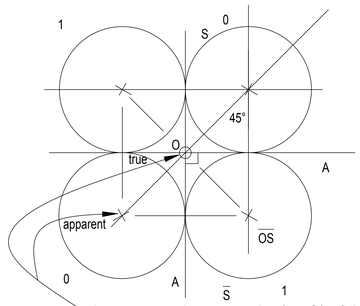


There will be a double inversion sum and cross product pointing into the board. The figure shows how a sphere would spin in three dimensions. This is the basic principle behind Penrose diagrams.

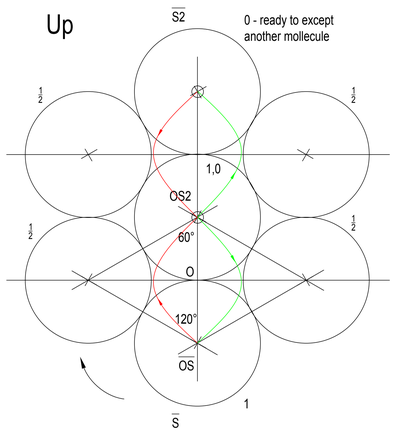
Apparent and true location of the sphere is not and the same. Sphere moves along the diagonal from OS to OS.

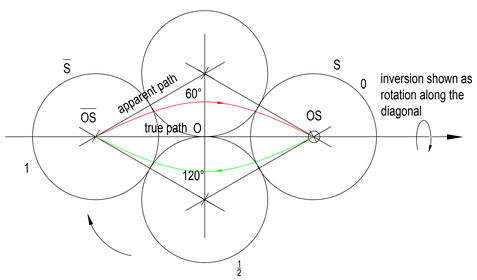


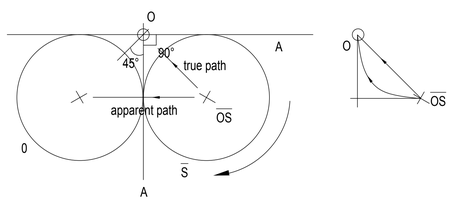
Plane inverts from zero to 1 and S (at zero) rotates on S̄ . Sphere will rotate about itself!



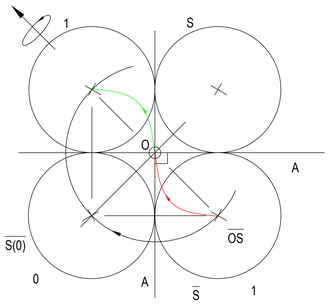
Apparent and true location(at O) of the sphere while the sphere may seem like it is traveling on a square, it is actually going along the diagonal OS to O !!! Actually it travels along the curved path shown bottom right.



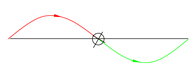




inversion shown as rotation along the diagonal

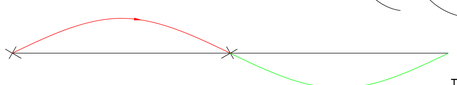


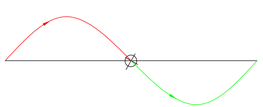
Plane inverts from zero to 1 and S (at zero) rotates on O as S̄(0) has shrunk to zero.
Magnitude of the forces keeping the mollecule together is equal to the diagonals, from the center of the sphere to O. As the particel spins around itself, its plane is inverted two times.



Wavelength

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