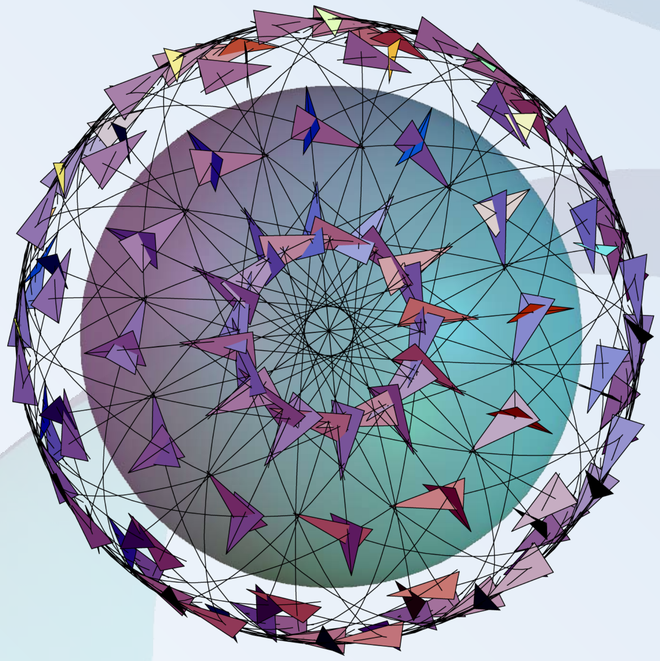
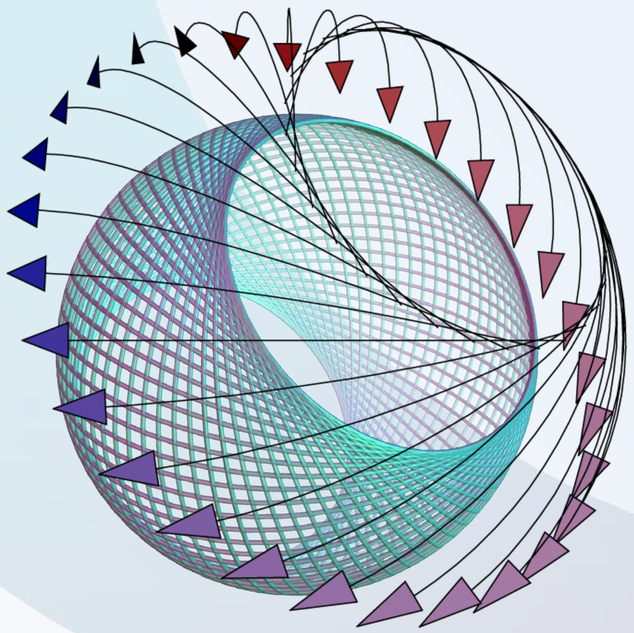
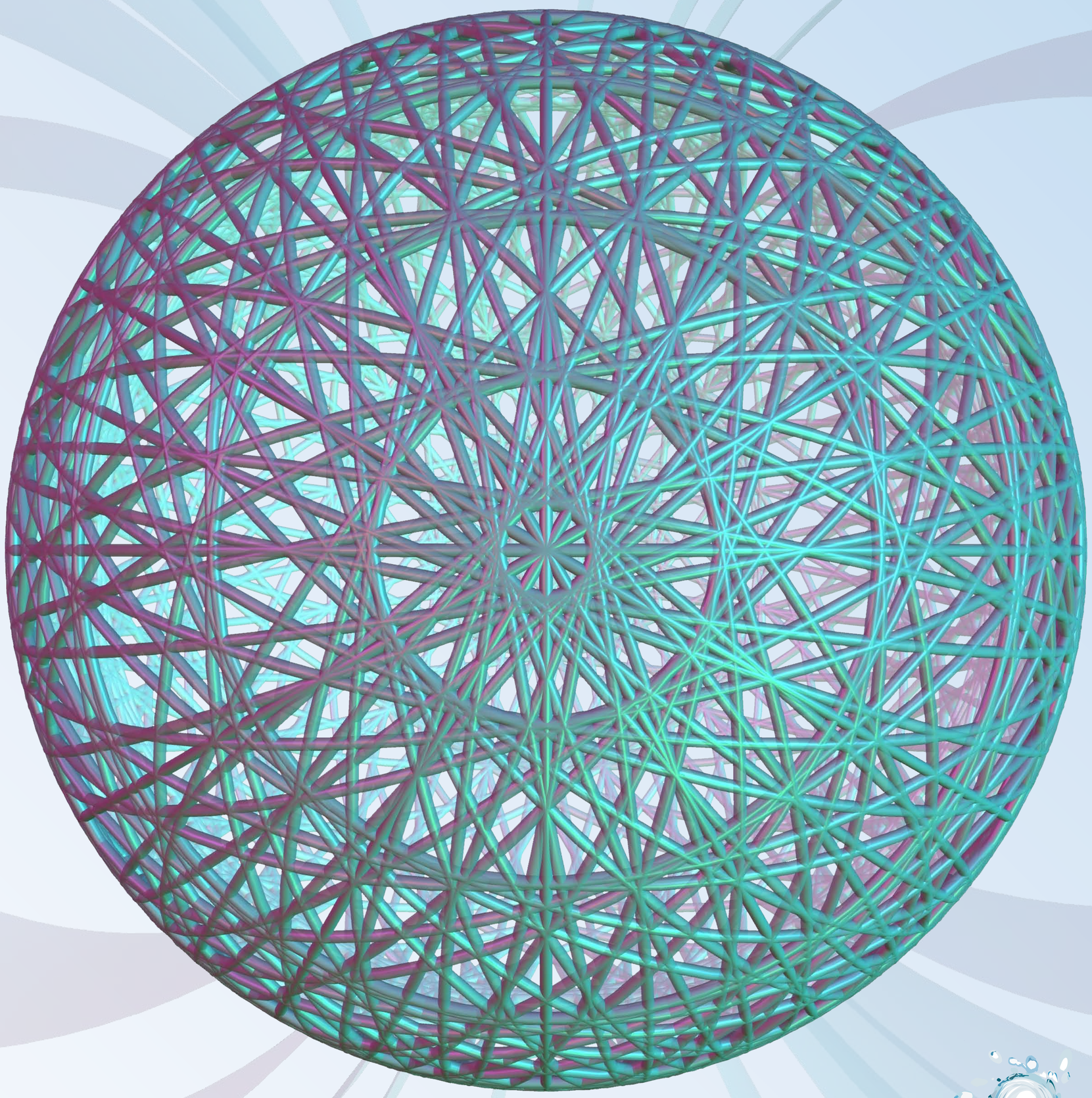
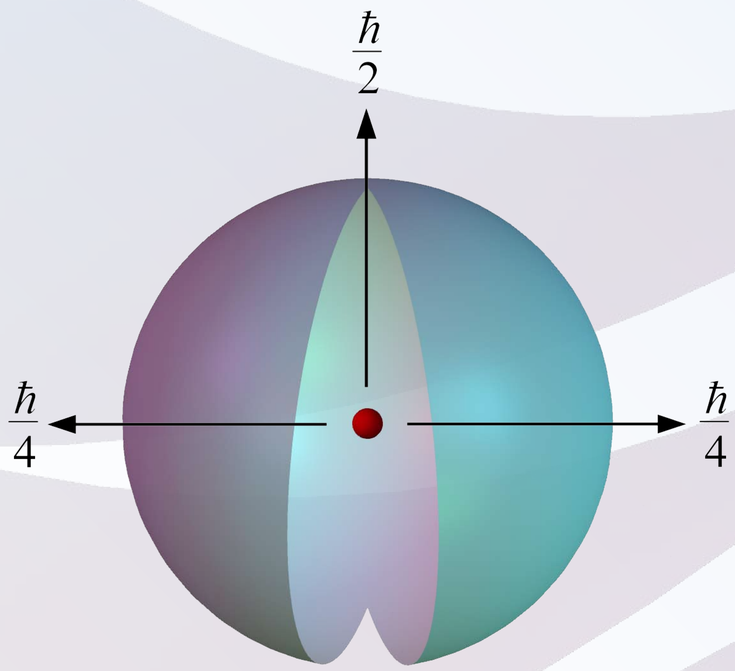


Spin Directions



Orbitsphere Current-Vector Field



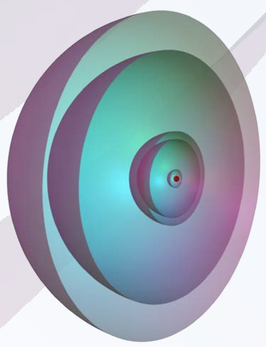


Angular Momentum

The Electron Orbitsphere

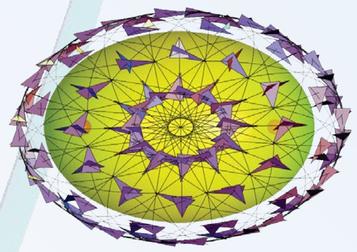
BLACKLIGHT POWER

The Grand Unified Theory of Classical Physics models the bound electron as a two-dimensional spherical shell of charge, completely surrounding the nucleus. It is composed of a continuous series of current paths that follow great circles, and produce angular momentum vectors (*shown left*), which give rise to the phenomenon of electron spin. Here the spin pattern, constructed using the orbitsphere current-vector field (*shown left*), is visualized with one hundred and forty-four paths. The magnitude of the current along each path is weighted to achieve a uniform current density. The stability of the electron is due to a result of Maxwell's Equations under which an extended distribution of charge may accelerate without radiating energy.



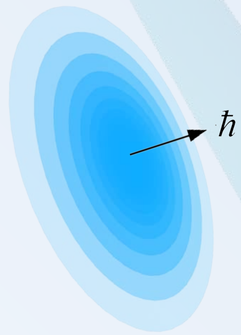
The Potassium Atom

In multi-electron atoms, electrons form a series of concentric shells. Each shell is an Atomic Orbital (AO) designated traditionally by *s, p, d, f...*, and may contain several electrons. The configuration of shells gives rise to an energy minimum, and Maxwellian forces between them determine their radii.



The Hydrogen Molecule

In molecules, the electrons stretch over two nuclei to form a prolate spheroidal shell with the nuclei at the foci, called a Molecular Orbital (MO). The charge builds up at the ends of the bond, closer to the nuclei, giving rise to an equipotential energy minimum. When AO shells are present, the MO shell may completely surround them, or bridge between them.



The Free Electron

The free electron is a spinning two-dimensional disk of charge. The mass and current density increase towards the center, but the angular velocity is constant. It produces an angular momentum vector perpendicular to the plane of the disk. The outer radius of the disk is given by $\hbar / m_e v_2$.