We suggest that this particle core exists for the simple reason that the energy of a fermion is finite. If this core region did not exist then we would be led to the inaccurate conclusion that a particle would be required to have infinite energy. Since we know that individual particles have finite energies we also suggest that this core region is real.

Fundamental Properties and Planck's constant

Planck's constant was derived as an empirical value which applies to the behavior of light. Due to differences in the nature of light and matter as we have discussed, there is a more fundamental constant. The constant similar to Planck's constant but more fundamental, has ½ the value of Planck's constant, and applies to elementary fermions instead of photons. We say that this is a more fundamental constant because this constant discloses the properties of the displacement of one component of space. Planck's constant is the sum of two of these more fundamental constants, and *relates specifically to light* because light is the displacement of two components of space, as we have discussed.

So we will use the expressions $\frac{h}{2}$ or $\frac{1}{2}h$ for this more fundamental constant of the quantization of action.

When we study light, we can relate Planck's constant and energy to wavelength, simply because the quantization of action causes an electromagnetic oscillation which possesses a specific wavelength. The mechanics of circulation of displacement of the two components of space cause a circulation of opposite "charges" which therefore displays an electromagnetic oscillation we can sense. And the period of oscillation is such that as the photon moves forward at c it completes one cycle of oscillation in one wavelength.

But the situation in an elementary fermion, like the electron, is quite different. There is no easily detectible "wavelength" in the electron like there is in the photon, simply because there is only one component of space displaced, so no opposing charges exist for us to measure a wavelength from. The electron does however possess a frequency of circulation. The frequency of circulation of an electron at rest is $2\sqrt{2}$ faster than the frequency of a photon with the same energy as an electron at rest.