

## TGD and Fringe Physics

The topics of this book could be called fringe physics involving claimed phenomena which do not have explanation in terms of standard physics.

Many-sheeted space-time with p-adic length scale hierarchy, the predicted dark matter hierarchy with levels partially characterized by quantized dynamical Planck constant, and the prediction of long ranged color and weak forces alone predict a vast variety of new physics effects. Zero energy ontology predicts that energy can have both signs and that classical signals can propagate in reversed time direction at negative energy space-time sheets and an attractive identification for negative energy signals would be as generalizations of phase conjugate laser beams. This vision leads to a coherent view about metabolism, memory, and bio-control and it is natural to ask whether the reported anomalies might be explained in terms of the mechanisms giving hopes about understanding the behavior of living matter.

1. The effects involving coin words like antigravity, strong gravity, and electro-gravity motivate the discussion of possible anomalous effects related to long range electro-weak fields and many-sheeted gravitation. For instance, TGD leads to a model for the strange effects reported in rotating magnetic systems.
2. Tesla did not believe that Maxwell's theory was an exhaustive description of electromagnetism. He claimed that experimental findings related to pulsed systems require the assumption of what he called scalar waves not allowed by Maxwell's electrodynamics. TGD indeed allows scalar wave pulses propagating with light velocity. The dropping of particles to larger space-time sheets liberating metabolic energy, transformation of ordinary charged matter to dark matter and vice versa, dark photons, etc... might be needed to explain Tesla's findings. Also phase conjugate, possibly dark, photons making possible communications with geometric past might be involved.

These speculative ideas receive unexpected support from the TGD inspired view about particle physics. The recent TGD inspired view about Higgs mechanism suggests strongly that photon eats the remaining component of Higgs boson and in this manner gets longitudinal polarization and small mass allowing to avoid infrared divergences of scattering amplitudes.

3. The reports about ufos represent a further application for TGD based view about Universe. Taking seriously the predicted presence of infinite self hierarchy represented by dark matter hierarchy makes it almost obvious that higher civilizations are here, there, and everywhere, and that their relationship to us is like that of our brain to its neurons, so that Fermi paradox (Where are they all?) would disappear. Although the space travel might be quite too primitive idea for the civilizations at higher levels of hierarchy, ufos might be real objects representing more advanced technology rather than plasmoid like life forms serving as mediums in telepathic communications.