

The view about the role of new nuclear physics predicted by TGD in the model of solar interior gives excellent guidelines for attempts to develop a more detailed understanding about TGD counterparts of blackholes as volume filling flux tube tangles. One ends up to rather detailed picture making correct predictions about minimum radii of blackholes and neutron stars. The idea about ordinary stars as blackhole like objects emerges.

The standard blackhole thermodynamics is replaced by two thermodynamics. The first thermodynamics is assignable to the flux tubes as string like entities having Hagedorn temperature T_H as maximal temperature. The second thermodynamics is assignable to gravitational flux tubes characterized by the gravitational Planck constant \hbar_{gr} : Hawking temperature T_B is scaled up by the ratio \hbar_{gr}/\hbar to $T_{B,D}$ and is gigantic as compared to the ordinary Hawking temperature but the intensity of dark Hawking radiation is extremely low.

The condition $T_H = T_{B,D}$ for thermodynamical equilibrium fixes the velocity parameter $\beta_0 = v_0/c$ appearing in the Nottale formula for \hbar_{gr} and suggests $\beta_0 = 1/h_{eff}$ for the dark nuclei at flux tubes defining star as blackhole like entity in TGD sense. This also predicts the Hagedorn temperature of the counterpart of blackhole in GRT sense to be hadronic Hagedorn temperature assignable to the flux tube containing dark nuclei as dark nucleon sequences so that there is a remarkable internal consistency. In zero energy ontology (ZEO) quasars and galactic blackholes can be seen as time reversals of each other.

The cosmological time anomalies such as stars older than the Universe can be understood. In ZEO the time evolution for the zero energy states associated with causal diamonds (CDs) by sequences of small state function reductions (weak measurements) gives rise to conscious entity, self. Self dies and re-incarnates with an opposite arrow of time in big (ordinary) state function reduction reversing the arrow of time. These reincarnations define kind of universal Karma's cycle. If the Karma's cycle leaves the sizes of CDs bounded and their position in M^4 unaffected, quantum dynamics reduces to a local dynamics inside CDs defining sub-cosmologies. In particular, the age distributions and properties of stars depend only weakly on the value of cosmic time – stars older than the Universe become possible in standard view about time.

The flux tube picture about galaxies and larger structures is discussed with application to some anomalies strongly suggesting the presence of coherence in scales of even billion light years. Also `{too}` fast spinning galaxies are discussed. The local galaxy supercluster Laniakea is discussed in the flux tube picture as a flux tube tangle in scale of .5 Gly.