
TGD as unified theory of fundamental interactions

1. TGD was born an attempt to construct Poincare invariant theory of gravitation. The motivation came from the energy problem of GRT. The notions of energy, momentum and angular momentum are lost since Poincare transformations are not isometries of the curved space-time. Noether's theorem cannot be used to give non-trivial analogs of conserved quantities (even if they were not conserved) since they simply vanish identically by Einstein's equations.
2. TGD can be seen as sub-manifold gravity meaning that space-time surfaces can be regarded as 4-D surfaces in 8-D space-time $M^4 \times CP_2$. This implies a huge reduction of classical field degrees of freedom but brings new degrees related to the shape of space-time surface as sub-manifold.
3. TGD extends Einstein's dream about geometrization of classical physics leading to the geometrization of known classical fields and elementary particle quantum numbers and also to geometrization of quantum physics itself in terms of classical spinor fields of WCW.
4. TGD can be also seen as a generalization of string models replacing strings with 3-D surfaces in $M^4 \times CP_2$. String model in 4-D space-time emerges from TGD and fundamental objects of TGD are very "stringy" in all length scales.