
Space-time as a 4-surface in $M^4 \times CP_2$

Space-time surface

1. is identified as preferred extremal of Kähler action contained by causal diamond (CD) analogous to Penrose diagram implying analogy with Bohr orbit meaning that 3-surfaces at the ends of space-time surface fix the space-time surface highly uniquely (apart from symmetries analogous to gauge symmetries)
2. is many-sheeted meaning that there is a hierarchy of space-time sheets which are glued to each other by wormhole contacts defining space-time regions with Euclidian signature of induced metric and whose orbits define space-time regions having interpretation as 4-dimensional "lines" of generalized Feynman diagrams.
3. topologically non-trivial in all scales.
4. consists of
 - (a) Minkowskian regions serving as analogs of space-time of general relativity carrying various classical fields. These fields do not directly correspond to gauge fields of gauge theories.
 - (b) Euclidian regions, which can have macroscopic size and serve as space-time correlates for objects of arbitrarily large size and could define TGD counterpart of blackhole interior. Euclidian regions have light-like boundaries having degenerate 4-metric and interpreted as parton orbits.