Quantum Classical Correspondence (QCC)

1. QCC states that quantal notions should ha ve classical space-time counterparts and is partially implied by General Coordinate Invariance demanding that the action of 4D general coordinate transformations is well-defined in the space of 3D surfaces defining WCW ("world of classical worlds" having 3D surfaces as points).

2. GCI is realized if the definition of WCW geometry assigns to 3sur face a unique 4D surface at which 4D general coordinate transformations act. One can losen the condition of uniquess.

3. GCI is realized in Kähler geometry for WCW if

   (a) Kähler function defining the metric is functional of the space-time surface assigned to the 3 surface.

   (b) If Kähler function is Kähler action for one might hope unique preferred extremal would imply QCC.

   (c) Classical physics defined by Kähler action would become exact part of quantum physics.

   (d) Classical space-time as preferred extremal would be analogous to Bohr orbit.

4. QCC suggests that

   (a) quantum states should correspond to space-time surfaces somehow.

   (b) Even nondeterministic quantum jumps should have space-time surfaces as correlates: contents of consciousness defined by quantum jump sequence should have space-time correlate. Space-time would be analogous as to written text providing symbolic representations.

   (c) Classical conserved char ges associated with Kähler action are identical with ei gen values of quantal char ges associated with Kähler Dirac action (in Cartan algebra). This could define constraint in Kähler action at the 3surfaces defining the ends of causal diamonds (CDs).

   (d) Classical correlations for general coordinate invariance observables obtained by averaging over points pairs related by isometries are quantal correlation functions.