OPEN TALK ANNOUNCEMENT

Thursday, 28.11.13   **3.00 p.m.**   **Fermion**

Speaker:

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Title:

Topology Change of Spacetime and Resolution
of Spacetime Singularity in Emergent Gravity

Abstract:

Emergent gravity is based on the Darboux theorem or the Moser lemma in symplectic geometry stating that the electromagnetic force can always be eliminated by a local coordinate transformation as far as U(1) gauge theory is defined on a spacetime with symplectic structure. In this approach, the spacetime geometry is defined by U(1) gauge fields on noncommutative (NC) spacetime. Accordingly the topology of spacetime is determined by the topology of NC U(1) gauge fields. We show that the topology change of spacetime is ample in emergent gravity and the subsequent resolution of spacetime singularity is possible in NC spacetime. Therefore the emergent gravity approach provides a well-defined mechanism for the topology change of spacetime which does not suffer from any spacetime singularity in sharp contrast to general relativity.