



OPEN TALK ANNOUNCEMENT

23 December 2015

11:30 a.m

Fermion

Speaker:

Dr. Sujoy K. Modak

(VASP Short Term Visitor to Prof. Rabin Banerjee)

Affiliation:

Theory Center,

High Energy Accelerator Research Organization, KEK, Japan

Title:

Resolving Black Hole Information Paradox: a Hint for Gravitational Influenced Quantum Collapse?

Abstract:

Black hole information paradox (BHIP) is an old but unsolved problem. There is an intense controversy regarding a satisfactory resolution of the problem, which, in our point of view may lead to new physics. We consider a novel approach to address this issue. The idea is based on adapting, to the situation at hand, the modified versions of quantum theory involving spontaneous stochastic dynamical collapse of quantum states, which have been considered in attempts to deal with shortcomings of the standard Copenhagen interpretation of quantum mechanics, in particular, the issue known as "the measurement problem". The new basic hypothesis is that the *modified quantum behavior is enhanced in the region of high curvature* so that the information encoded in the initial quantum state of the matter fields is rapidly erased as the black hole singularity is approached. We show that in this manner the complete evaporation of the black hole via Hawking radiation can be understood as involving no paradox. Moreover, this approach put forward a broader view of possible gravitational influence on quantum superposition.

References: (1) Phys. Rev. D 91 (2015) 12, 124009 [arXiv:1408.3062]

(2) Gen. Rel. Grav. 47 (2015) 10, 120 [arXiv:1406.4898]
