

The effect of Quantum Gravity on astrophysical neutrino flavor observables.

Thursday, 28 August 2014 14:00 (20 minutes)

At the quantum level, an interaction of a neutrino with a graviton may trigger the collapse of the neutrino flavor eigenstate to a neutrino mass eigenstate. I will present that such an essentially quantum gravity effect may have strong consequences for neutrino oscillation phenomena in astrophysics due to the relatively large scattering cross section of relativistic neutrinos off massive sources of gravitational fields (the case of gravitational Bethe-Heitler scattering). This results in a new technique for the indirect detection of gravitons by measuring the flavor composition of astrophysical neutrinos.

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Session Classification: Neutrinos and related astrophysical implications

Track Classification: 3) Neutrinos and related astrophysical implications