CU Physics Department Colloquium

Monday, December 12, 2011 4:10 PM 428 Pupin Hall

Neutrino Oscillation – A Quantum Mechanical Adventure

Neutrino oscillation, through which we have discovered that neutrinos have nonzero masses, involves quantum mechanics in an essential way. We will present a new treatment of the quantum mechanics of neutrino oscillation, and of neutral particle-antiparticle oscillation, that avoids quantum-mechanical puzzles such as Einstein-Podolsky-Rosen correlations. Then we will review what has been learned from the neutrino oscillation data, including recent news and surprises. We will conclude by commenting on where we go from here, focusing on the search for results that could point to a central role of neutrinos in the creation of the observed matter-antimatter asymmetry of the universe.

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