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Atmospheric Neutrino Oscillations with the IceCube Upgrade

Tuesday, 17 September 2024 15:05 (20 minutes)

The IceCube Upgrade will be an extension of the IceCube Neutrino Observatory which consists of the addition of 7 more densely instrumented strings placed within the IceCube DeepCore volume to enhance performance in the GeV energy range. The additional strings will feature new types of instruments and optical modules, each containing multiple photomultiplier tubes (PMTs), which will improve the calibration, detection efficiency, reconstruction performance, and particle classification at GeV energies and provide world-leading oscillation sensitivities using atmospheric neutrinos. In this talk, we will give a summary of the new hardware to be incorporated for the IceCube Upgrade, discuss the reconstruction, classification, and selection techniques developed for the IceCube Upgrade oscillation sample, and show sensitivities to measurements of physics parameters using atmospheric neutrinos with IceCube Upgrade.

Working Group

WG 1: Neutrino Oscillation Physics

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