CU Physics Department Particle Seminar

Wednesday, November 30, 2011 705 Pupin Hall 1:00 PM

K+ Production from 8.9 GeV Protons using Neutrino Interactions in SciBooNE

The Booster Neutrino Beam (BNB) at Fermilab collides 8.9 GeV protons on a Be target to provide neutrinos for current (MiniBooNE) and future (MicroBooNE) experiments. A complete understanding of BNB's neutrino flux is crucial for ongoing and future analyses of these experiments. The analysis to be presented uses SciBooNE, a precision neutrino cross-section detector placed in the BNB, to measure the K+ production cross-section at BNB's Be target through high energy daughter muon neutrino scattering data off of SciBooNE's polystyrene (C8H8) target. The validation of K+ production cross-section modeling using Feynman scaling to BNB's p-Be interaction energy levels will be argued and a K+ production cross-section measurement at 8.9 GeV will be presented.

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