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The Angular Dependence of π^0 Production in the MiniBooNE Antineutrino Data[1] VAN NGUYEN, Columbia University — The single largest background to future $\bar{\nu_\mu} \rightarrow \bar{\nu_e}$ oscillation searches is neutral current π^0 production. MiniBooNE, which began taking antineutrino data in January 2006, has the world's largest sample of π^0's produced by antineutrinos. These neutral pions are primarily produced through the Δ resonance but can also be created through "coherent production." The latter process is the coherent sum of glancing scatters of antineutrinos off a neutron or proton, in which the nucleus is kept intact but a π^0 is created. A signature of this process is a π^0 which is highly forward-going. It is useful to study coherent production using antineutrinos rather than neutrinos because the ratio of coherent to resonant scattering is enhanced in antineutrino running. This talk will discuss the angular dependence of π^0 production in the MiniBooNE antineutrino data.

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