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Muon Neutrino Scattering on Cryogenic Helium Using the MINERvA Detector

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Using the MINERvA detector exposed to the NuMI wide band neutrino beam we have isolated a sample of neutrino-helium events using a cryogenic liquid helium target. We present an effort to measure the first ever differential cross sections $\frac{d\sigma}{dE_\mu}$ and $\frac{d\sigma}{d\theta_\mu}$ on liquid helium.

Summary

Presenting a work in progress analysis to measure differential cross sections in muon energy and angle for muon neutrino interactions on cryogenic helium.

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