

Muon Neutrino Physics with NOvA

The NuMI Off-axis electron neutrino Appearance (NOvA) experiment provides a powerful tool for examining exotic neutrino-matter effects, as well as precision measurements of traditional oscillation parameters. Its 810 km baseline, from FNAL to Ash River, MN, off-axis location, and run plan, uniquely position it to measure differences in oscillation probabilities of muon neutrinos and muon antineutrinos traversing matter. Shown in the poster are sensitivities of NOvA to the asymmetry of those parameters. In addition, the muon neutrino analysis will give precision measurements of the magnitude of the mass splitting and θ_{23} , possibly aiding in determining the mass hierarchy and CP violating phase angle.

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