



The particle accelerators at Fermilab

Physics Goals and Sensitivity of NOvA

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NOvA seeks to answer these questions

Does the ν_3 mass state have a ν_e component?

Is $\theta_{13} \neq 0$?

Is there CP violation in the lepton sector?

Is $\delta_{\text{CP}} \neq 0$ and $\theta_{13} \neq 0$?

Is the ν_3 more massive than the ν_1 and ν_2 ?

Normal Hierarchy ($\Delta m_{31}^2 > 0$)

Inverted Hierarchy ($\Delta m_{31}^2 < 0$)

Does the ν_3 mass state have more ν_μ or ν_τ ?

Is $\theta_{23} \neq \pi/4$?

Compared to current measurements NOvA will have an order of magnitude greater sensitivity to these questions
...and might answer these questions...