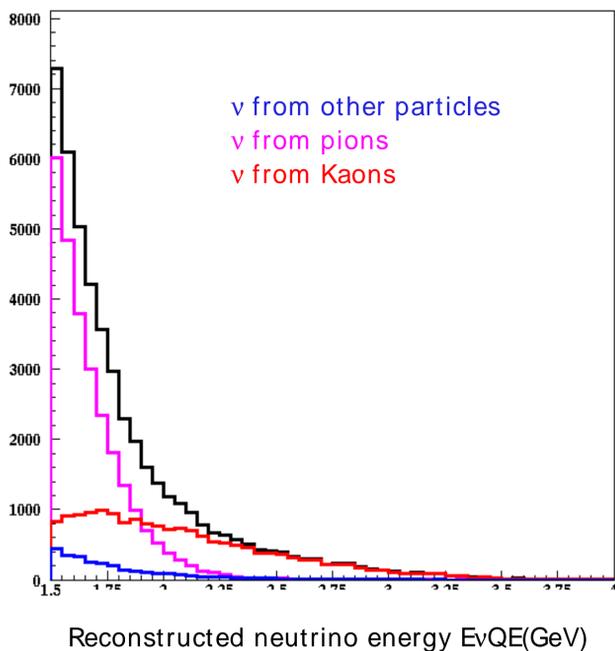


High energy data sample



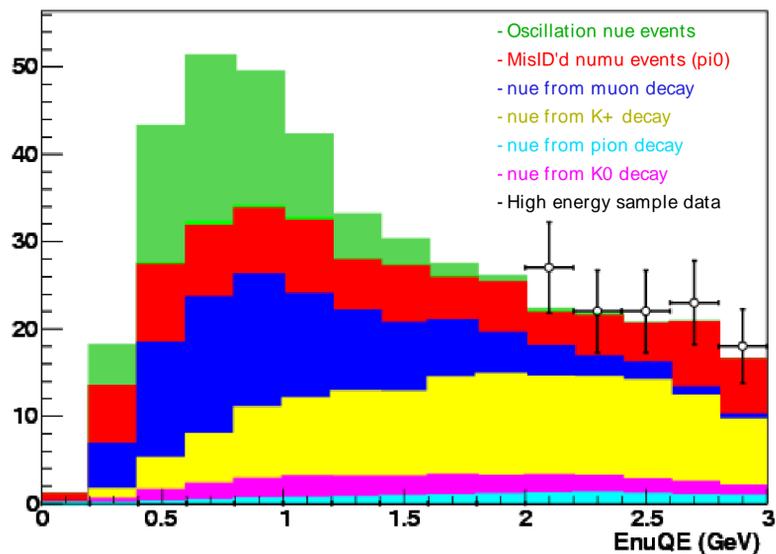
The highest energy events are primarily from kaon decays.

Two samples at high energy provide normalization and shape information for kaon backgrounds to oscillation analysis:

- ν_e events passing oscillation event selection cuts
- ν_μ induced CCQE, CC π^+ events

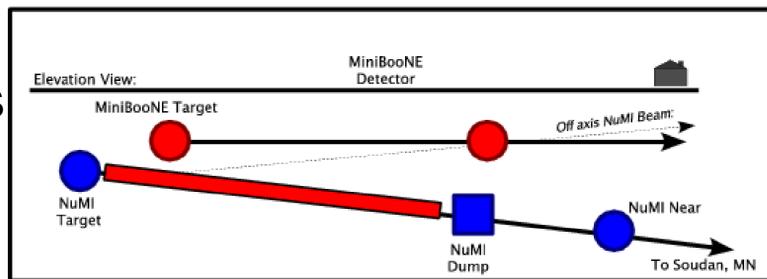
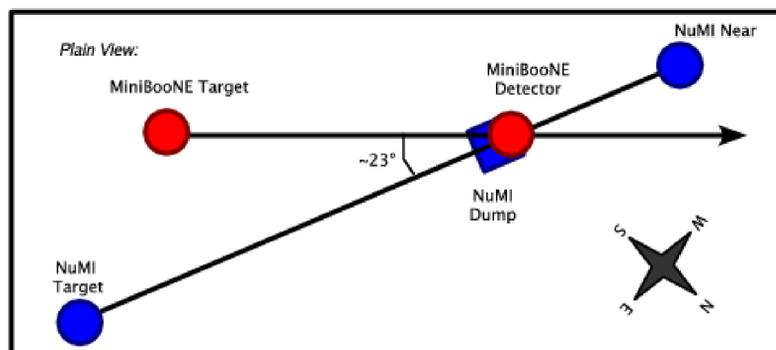
Boosting-based PID selects electron-like neutrino events

- Oscillation events
- Intrinsic beam ν_e s
- Mis-identified ν_μ interactions



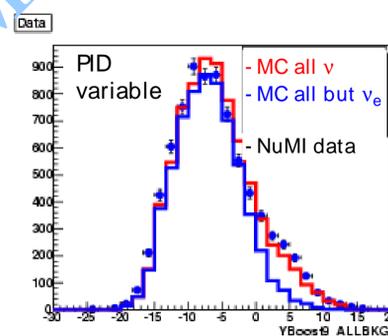
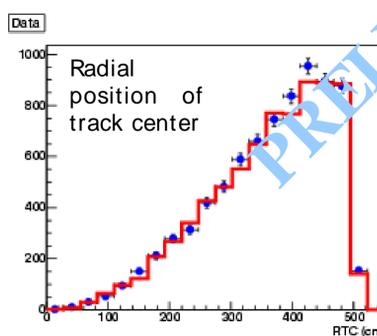
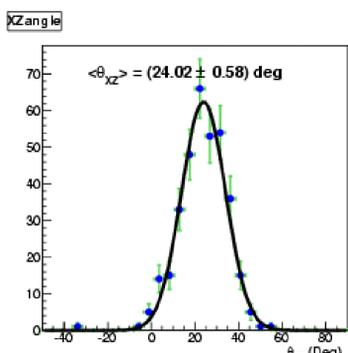
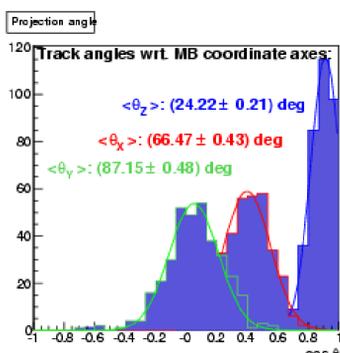
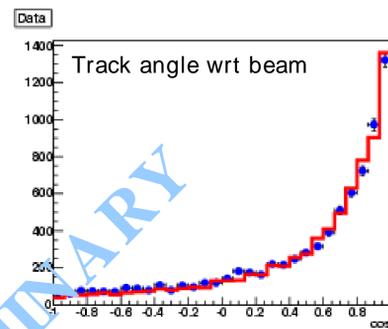
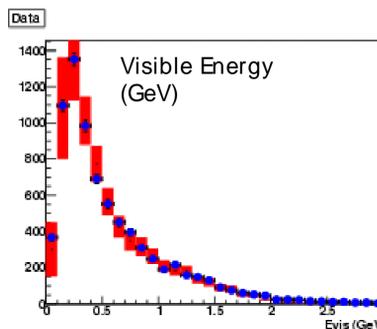
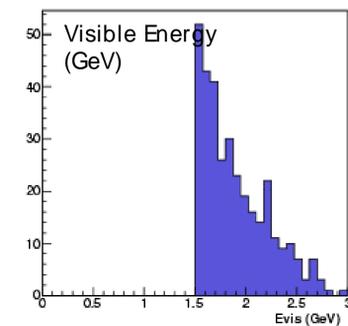
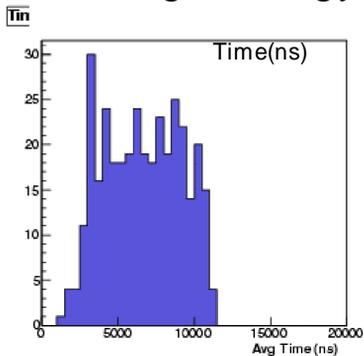
Events from the NuMI Beamline

- NuMI beam events provide an useful calibration sample
- Collected over 70K candidates before shutdown
- World's first off-axis neutrino beam
- Important tests of PID algorithms on ν_e of relevant energies



High energy exiting events

Contained NuMI ν candidates



Direction cosines of reconstructed tracks wrt to MiniBooNE coordinates

Track angle in x-z plane showing correlation of x, z dir axes