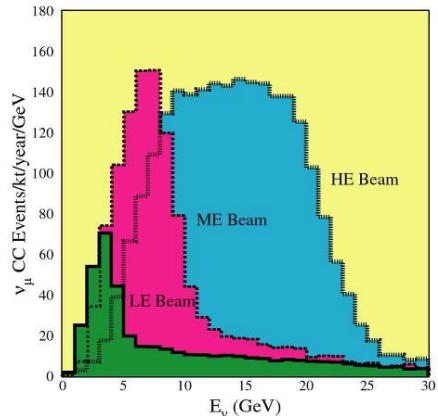
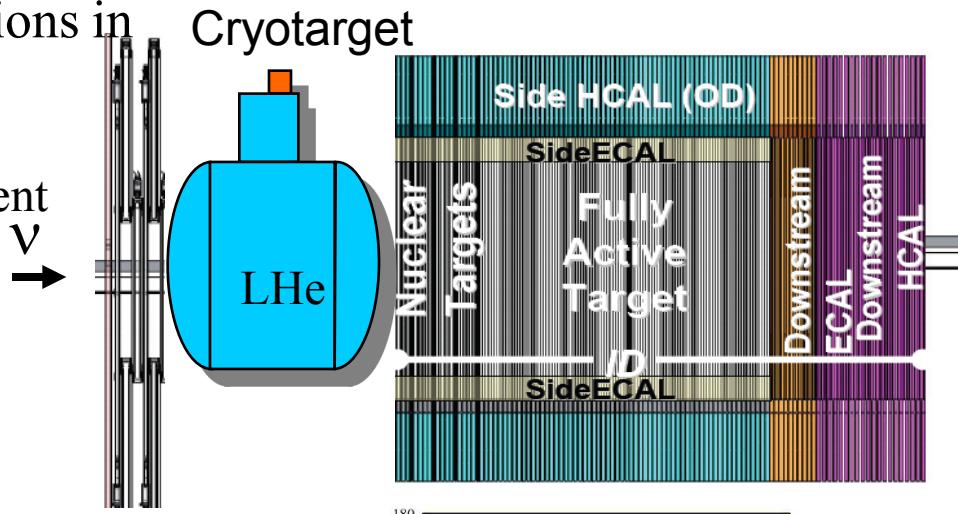


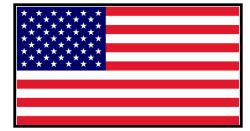


MINERvA: What and Why?

- ◆ MINERvA is studying neutrino interactions in unprecedented detail
- ◆ ***What are the goals?***
 - ◆ To make measurements needed for current and future oscillation experiments
 - ◆ Measurements of weak interactions on a variety of strongly bound systems
- ◆ ***Why MINERvA at NuMI?***
 - ◆ NuMI provides
 - » High intensity for precision measurements in a fully active detector
 - » A wide range of available energies
 - ◆ The MINERvA detector
 - » Supports reconstruction of a broad range of final states
 - » Has multiple nuclear targets to study the effect of the nucleus on neutrino interactions



~75 Particle, Nuclear, and Theoretical physicists from 21 Institutions



MINERvA Physics Reach

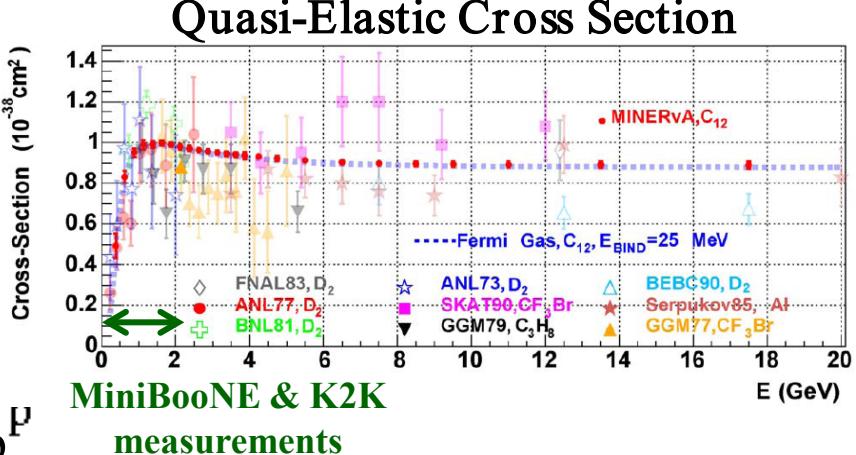
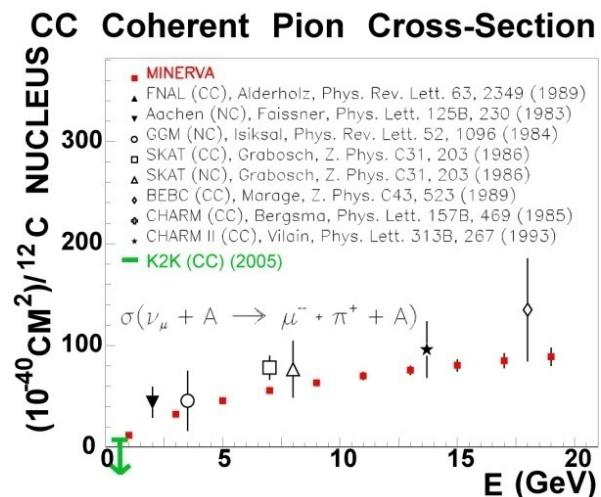
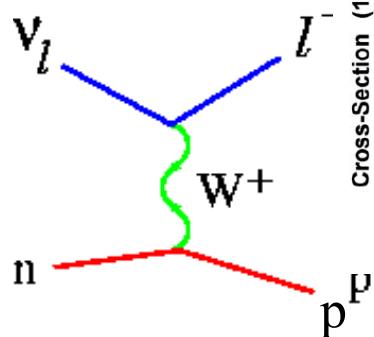
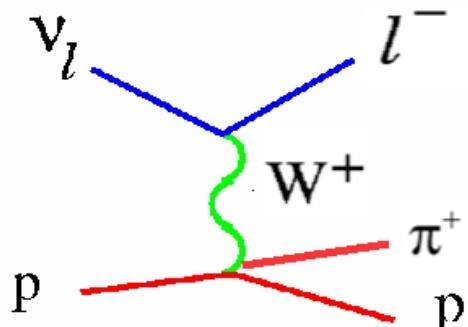


- ◆ *NuMI Beam provides:*

- ◆ Million event statistics for 1 ton targets in 4 year run
- ◆ ν Energies from 1-20GeV

- ◆ *MINERvA Detector provides:*

- ◆ Clean identification of common and rare processes
- ◆ unprecedented comparisons from atomic number 2 to 82



Target	Fiducial Mass (ton)	Charged Current Sample
Helium	0.25	0.6M
Hydrocarbon	3	8.6M
Carbon	0.6	1.4M
Iron	1	2.9M
Lead	1	2.9M
Water	0.3	0.7M



MINERvA Detector Status

◆ *Construction complete*

- ◆ 2.3 years to build detector
- ◆ On time, under budget

◆ *Installation complete*

- ◆ Modular design allowed installation and commissioning in NuMI Beam before last components are built

- ◆ Took $\sim 0.4 \times 10^{20}$ POT Neutrinos 4/09-6/09, 20% of detector
- ◆ Took $\sim 1.3 \times 10^{20}$ POT Antineutrinos, 11/09-3/10, 50% of detector

- ◆ *Approved for 16×10^{20} POT*
- ◆ *Run Start: March 22, 2010*

105m
below
ground in
NuMI
Beamline:

Last
Module
going in

