MINERνA grows!

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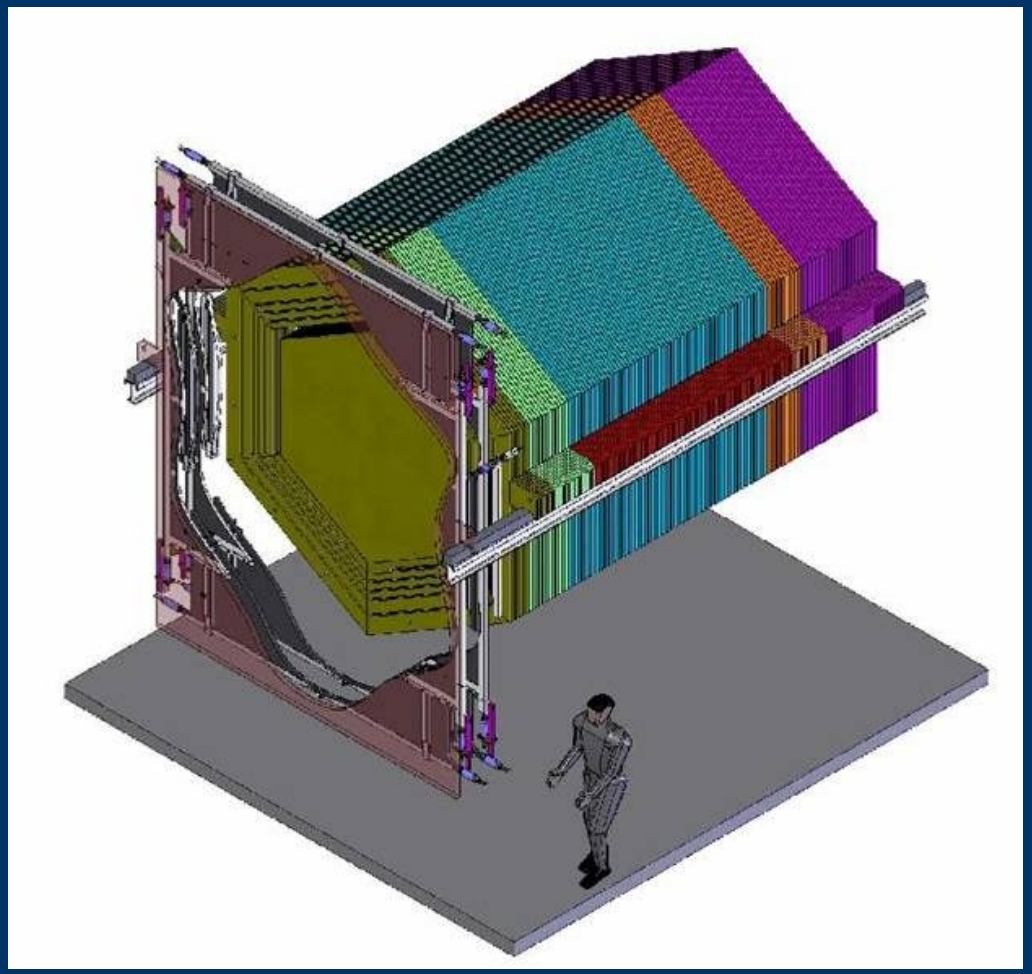
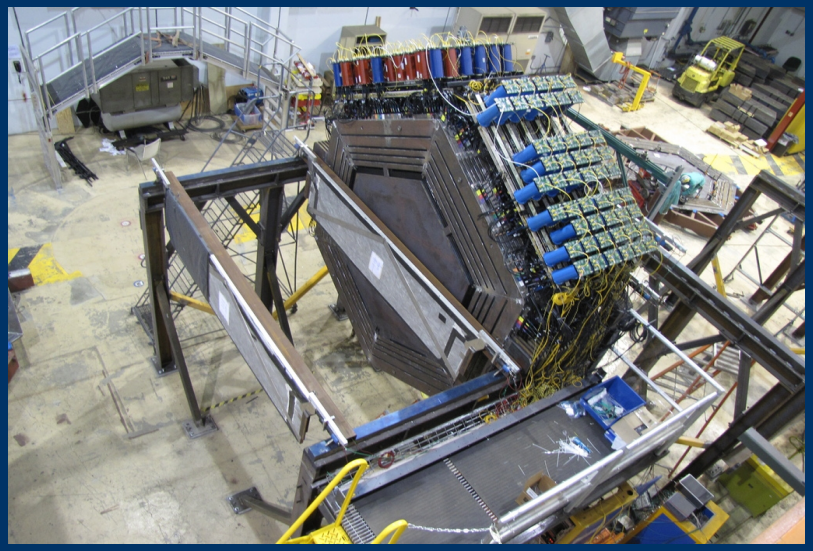
on behalf of MINERνA collaboration

MINERvA experiment

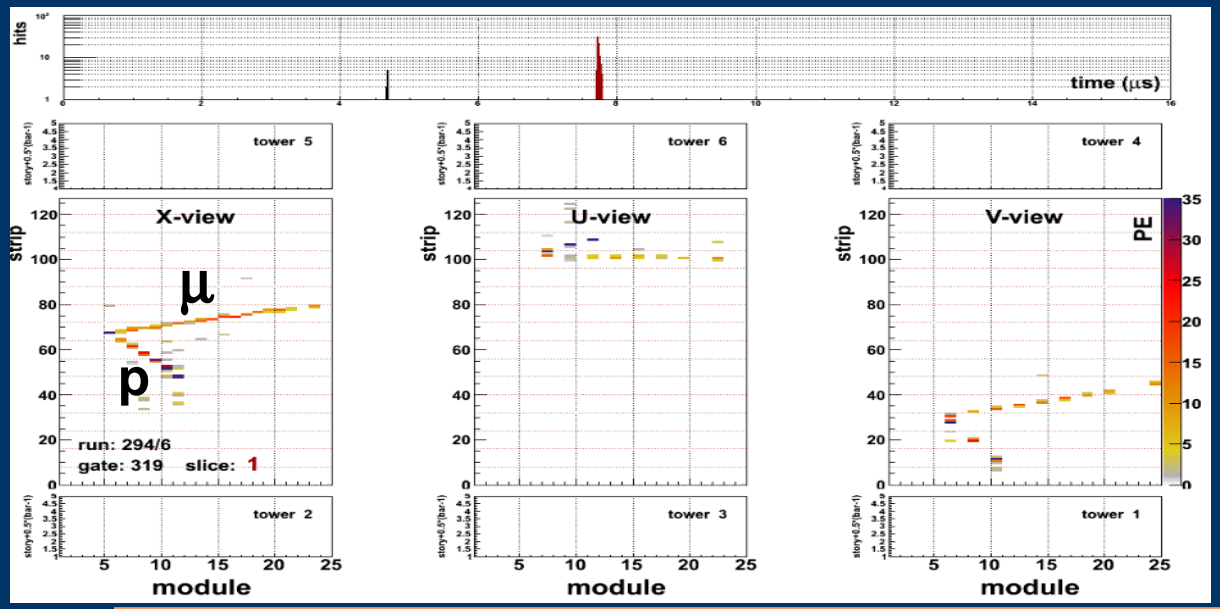


- **high-precision cross-section measurements for present** and future neutrino oscillation experiments
- **a hybrid of fully-active fine-grained tracking detector and traditional calorimeter**
- **appr. 30,000 scintillator channels**
- **electromagnetic and hadronic calorimetry regions**
- **various nuclear targets (C, Fe, Pb, ^{3}He, water)**

Tracking prototype



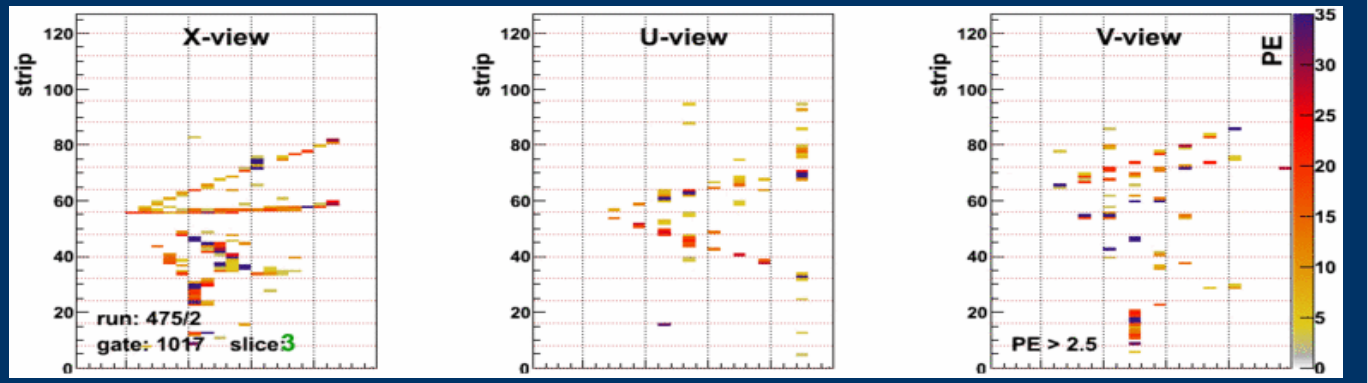
- prototype version of final detector (appr. 20% of full detector)
- operated from April to June 2009 in NuMI beam



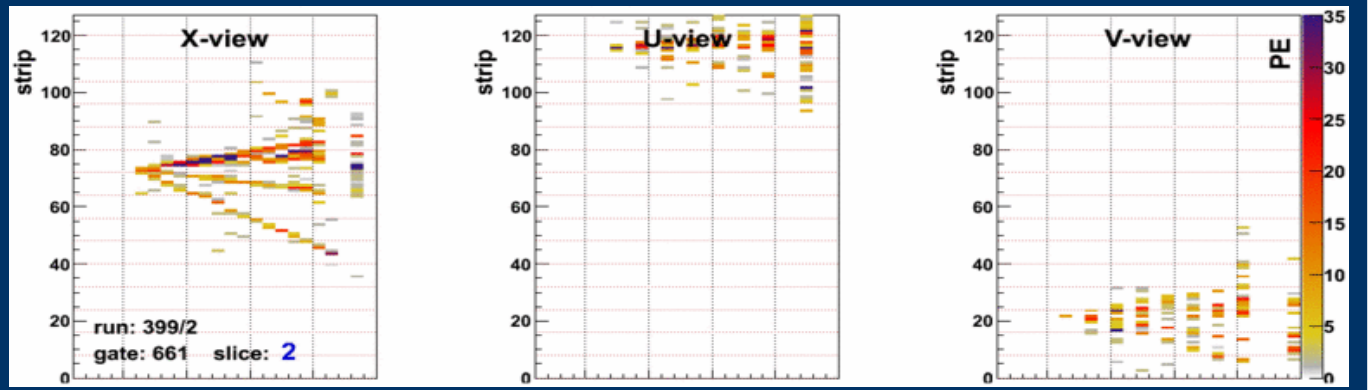
Already obtained valuable data!

Tracking prototype

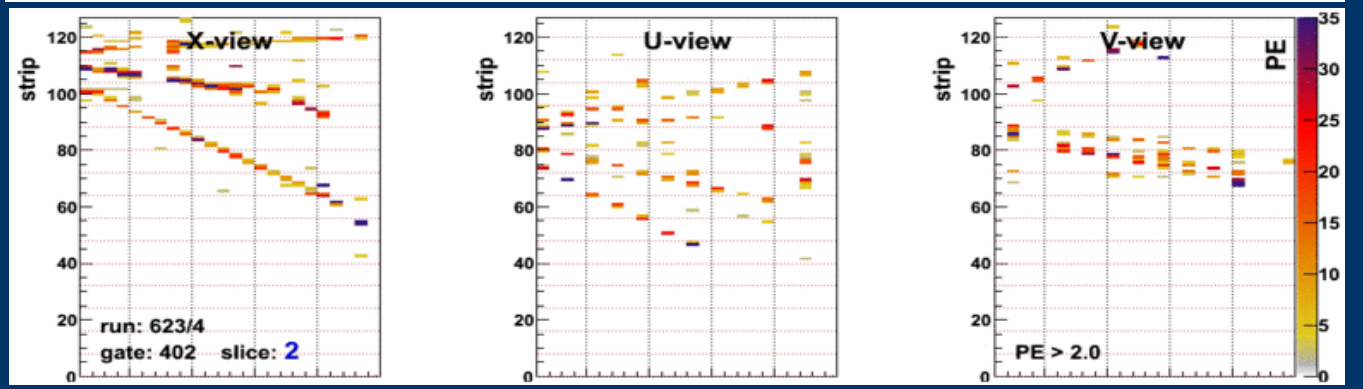
π^0



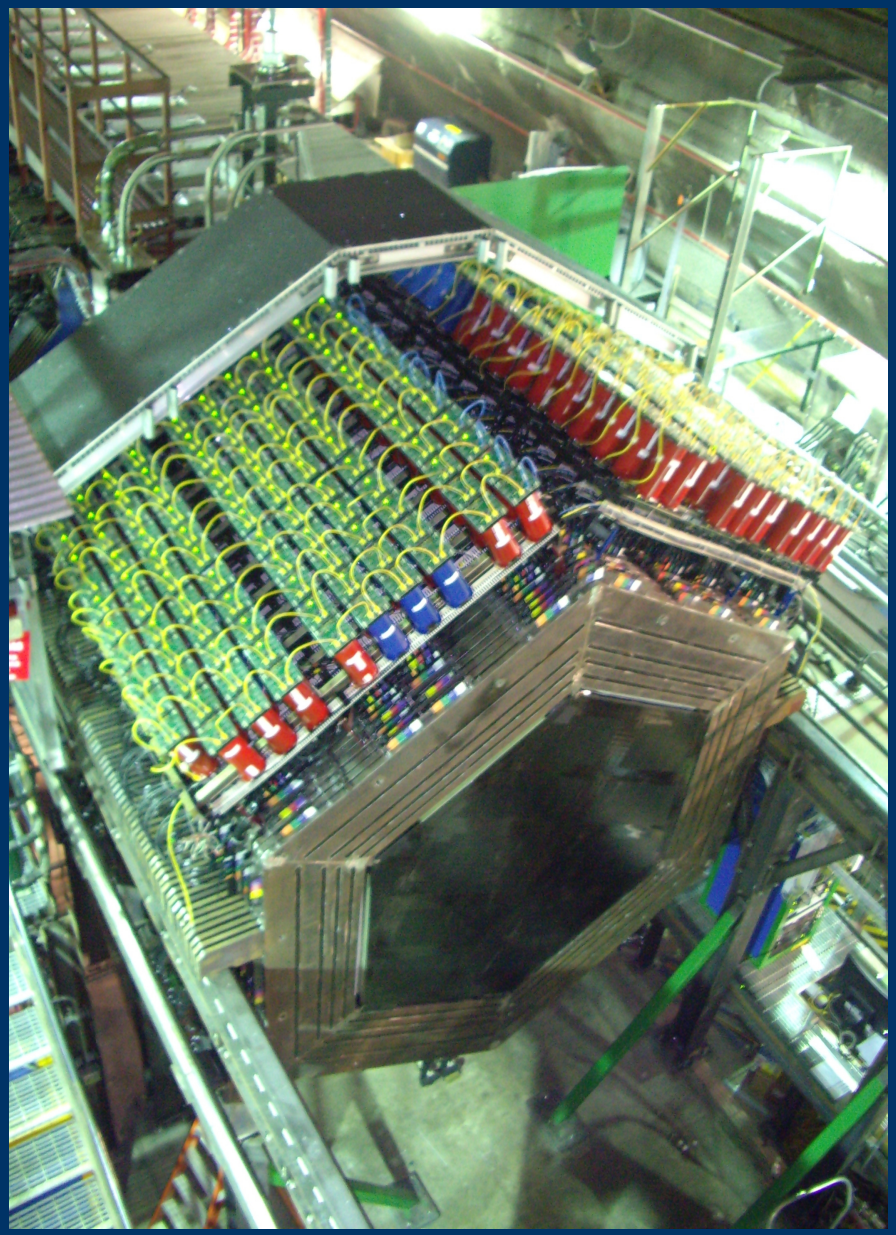
DIS



event from upstream target



Installation update



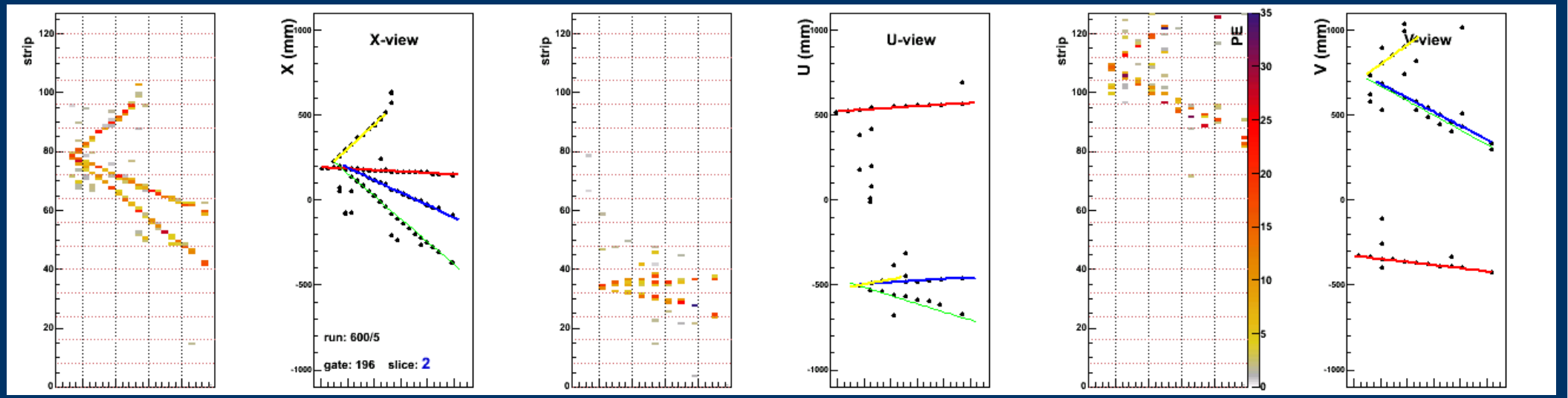
- fully instrumented 60% of the final detector
- will freeze on November 12 to take anti-neutrino data for appr. 4 months
- plan to complete installation in early March, 2010

Construction update

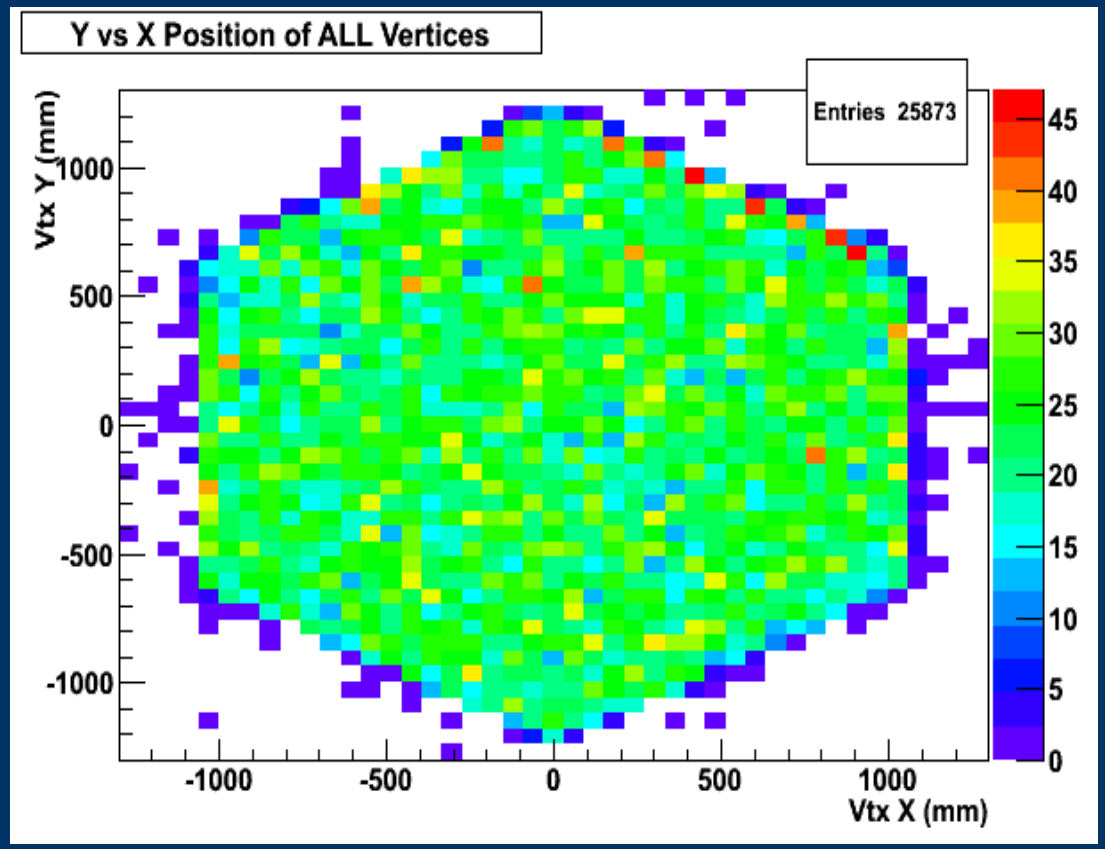
- appr. 30 modules left to make (total of 116 modules)
- plan to complete module building in early January 2010

Analysis update 1
Tracking

- in advanced state
- can efficiently reconstruct long (>8 modules) and short (5-7 modules) tracks
- more work is needed for very-short (<4 modules) tracks

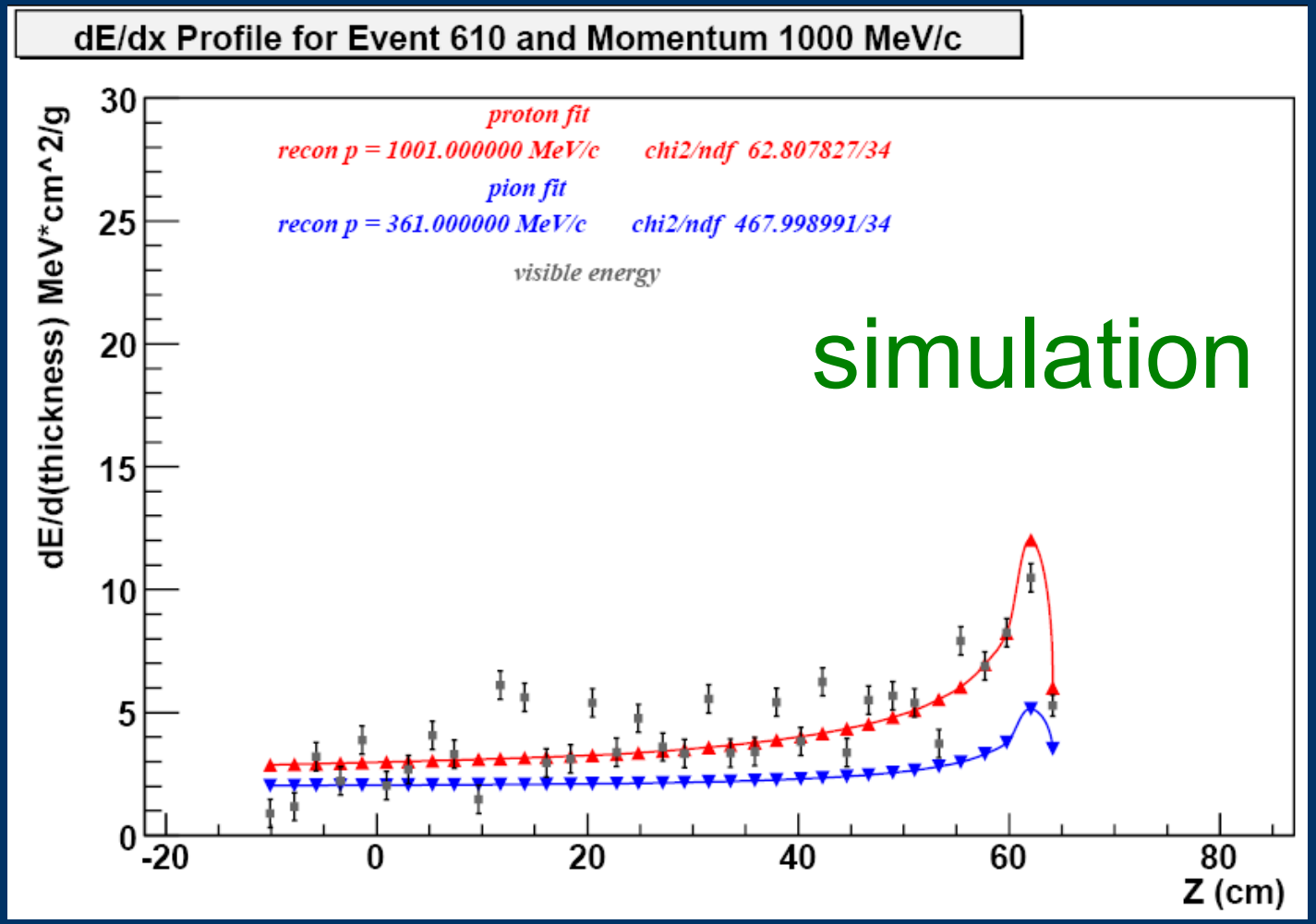


Analysis update 2
Vertexing



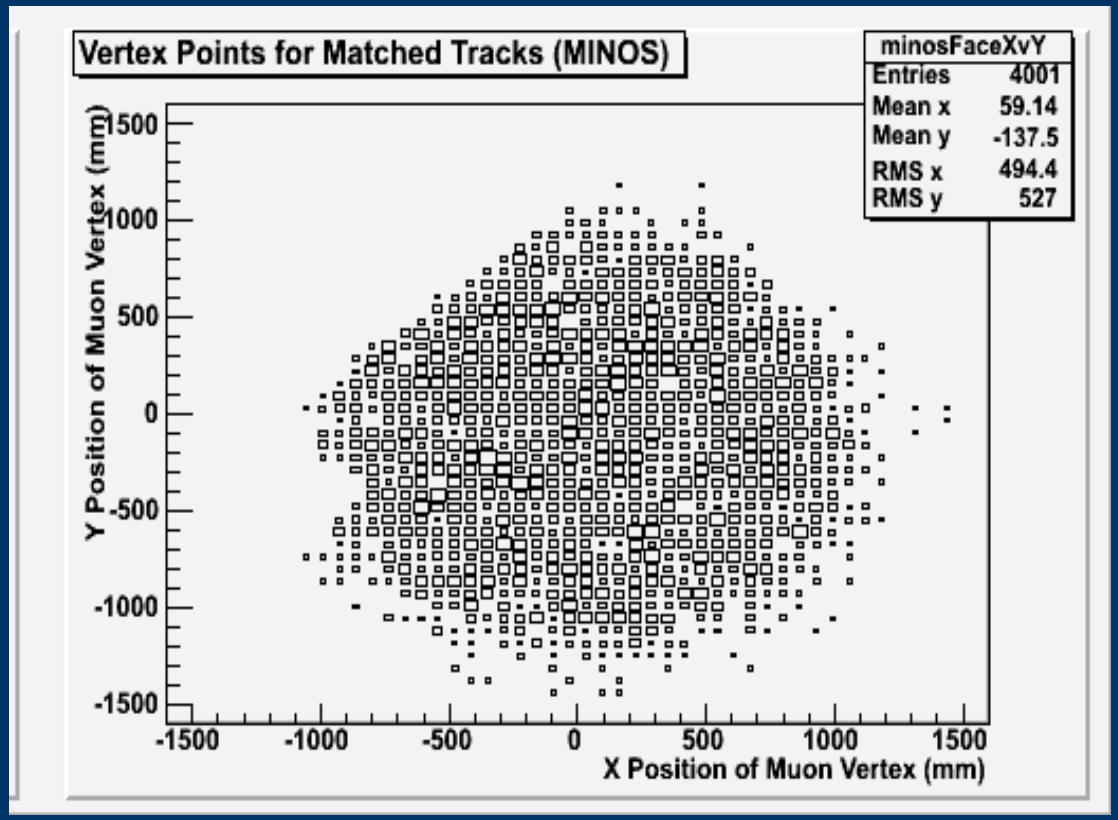
- in pre-mature state
- track refs, position, errors
- track multiplicity
- need work on vertices from upstream interactions and kinked tracks

Analysis update 3
Particle ID



- in pre-mature state
- proton-pion discrimination
- secondary nuclear interactions (kinked tracks)

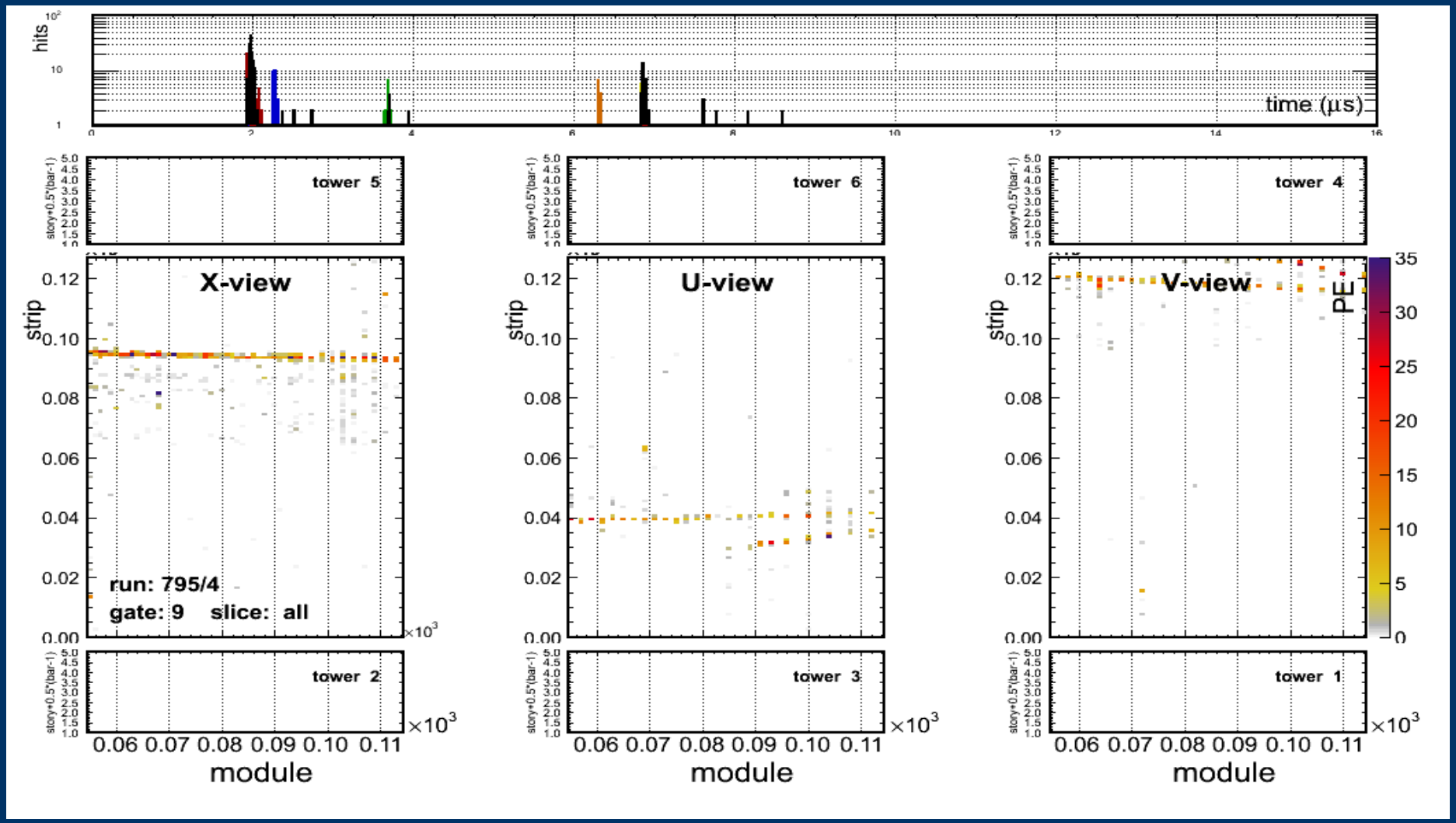
Analysis update 4
muons into MINOS



- in mature state
- match muon tracks between MINERvA and MINOS
- working on efficiency, backgrounds, etc.

Last minute update

The first processed events are here !!!



Summary

- MINERvA is planning to complete full detector installation in early March 2010
- module building will be completed in early January 2010
- analysis efforts are quickly growing
- stay tuned for more updates from “frozen” configuration