

NuMI Target Simulation with FLUKA

Nick Graf

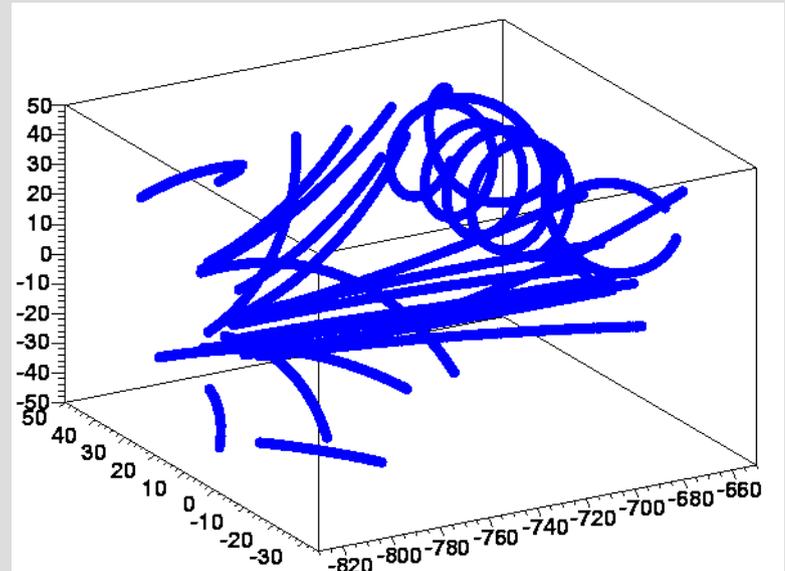
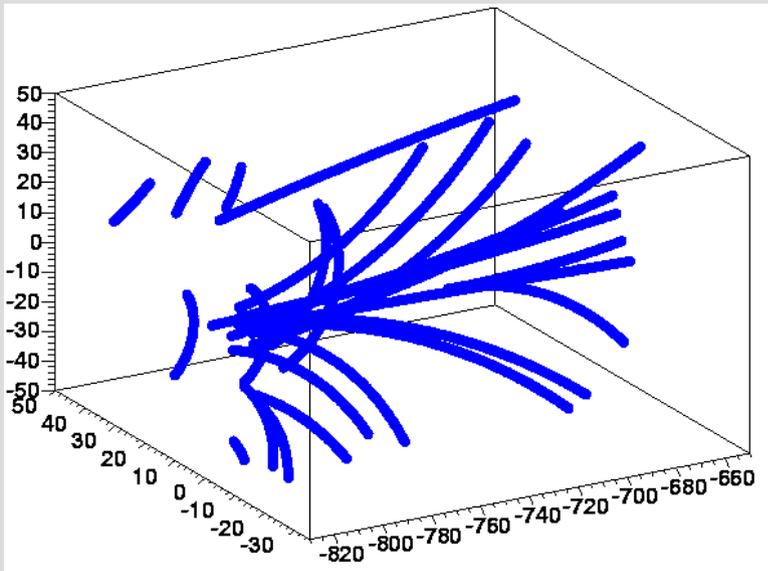
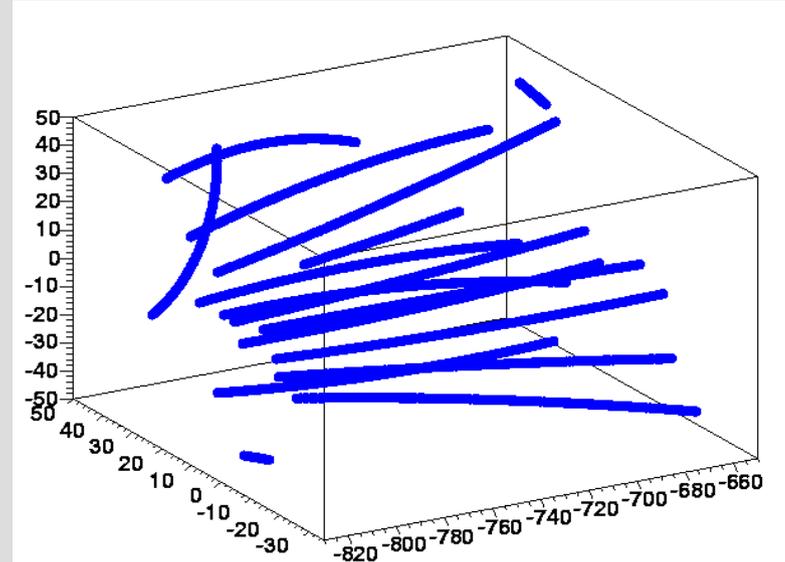
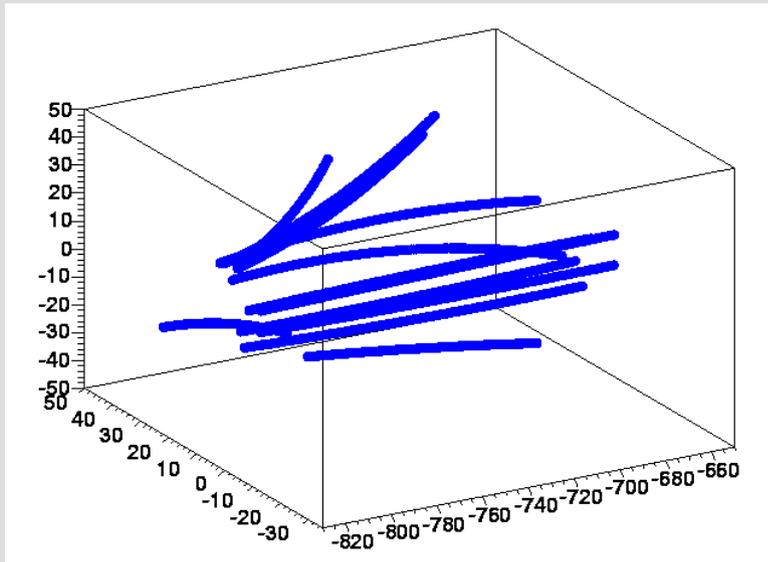
MIPP Software Meeting

Thursday, June 9, 2005

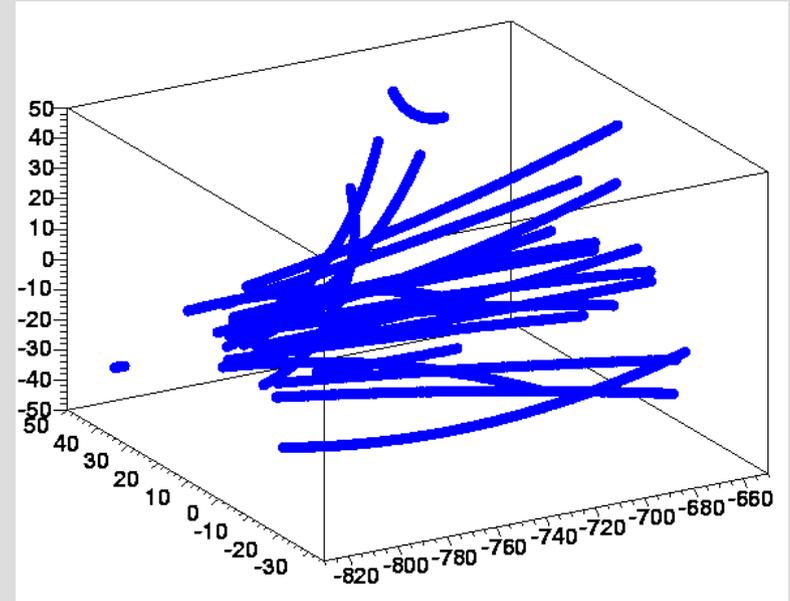
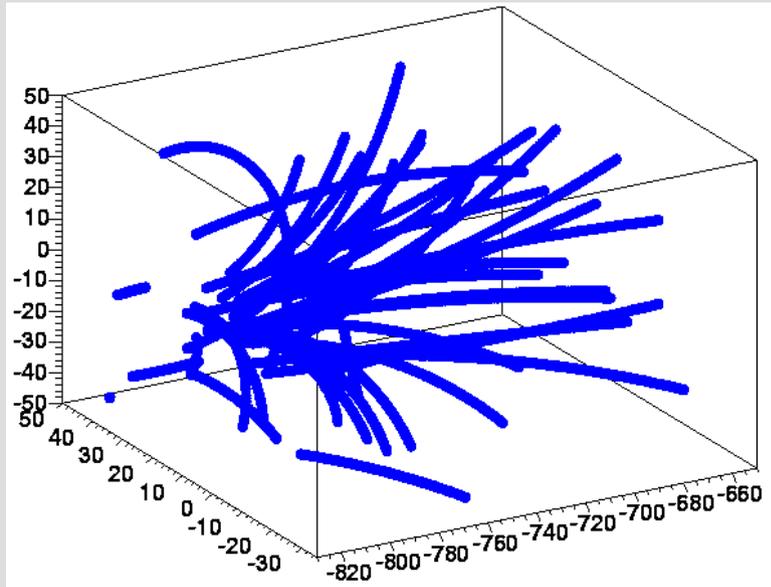
Purpose of Study

- Determine then number of charged tracks in the TPC due to EM showers in the target
- What effect will the increased number of tracks have on the readout time of the TPC
- What I did
 - Simulate production on NuMI target with FLUKA
 - Run FLUKA output through e907mc and look at TPC event displays
 - Plot multiplicity distributions of particles coming off of target

Pseudo-Event Displays

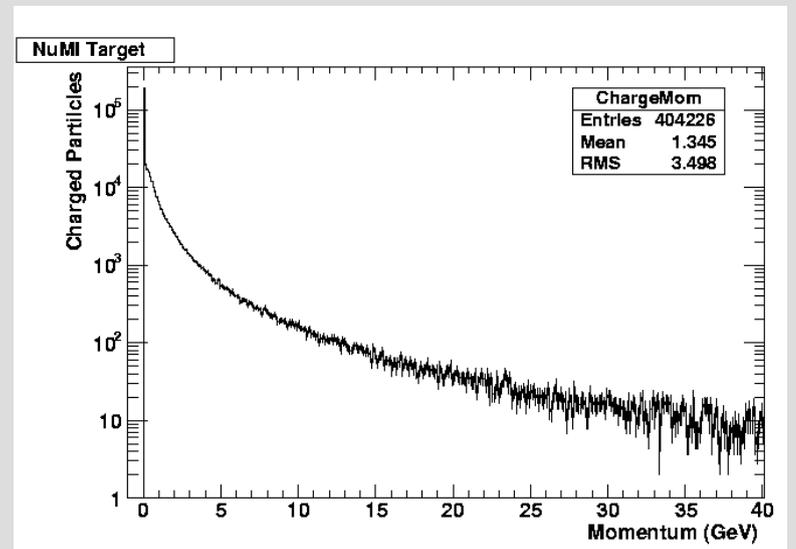
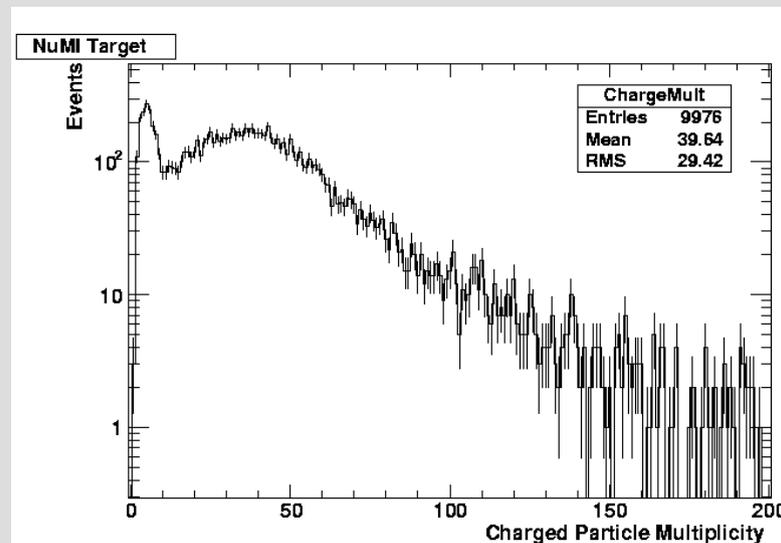
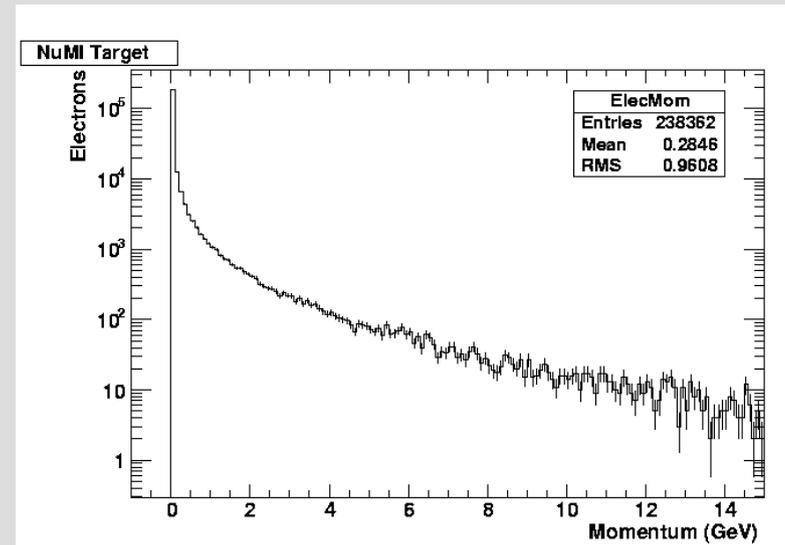
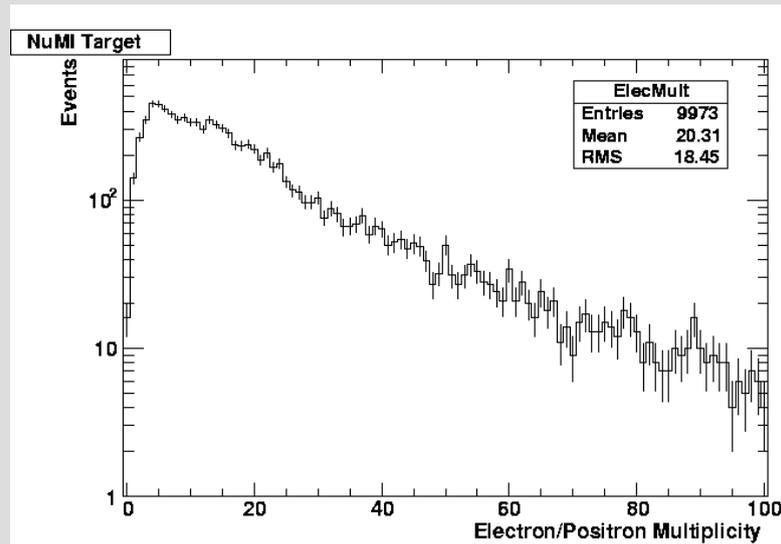


More Event Displays



Some events have a large number tracks in the TPC while others have a more manageable number of tracks

Multiplicity/Momentum Distributions



Results So Far

- Electron/positron multiplicity as high as 100
- Charged particle multiplicity peaks above 150
- Results are straight from target
- Still to do
 - Filter out particles that don't reach TPC (currently running)
 - Add in target box to simulation