NuMI Surface Building and Near Detector Fluxes

75 mrad was used w/o question. Number has unknown origin and is incorrect.

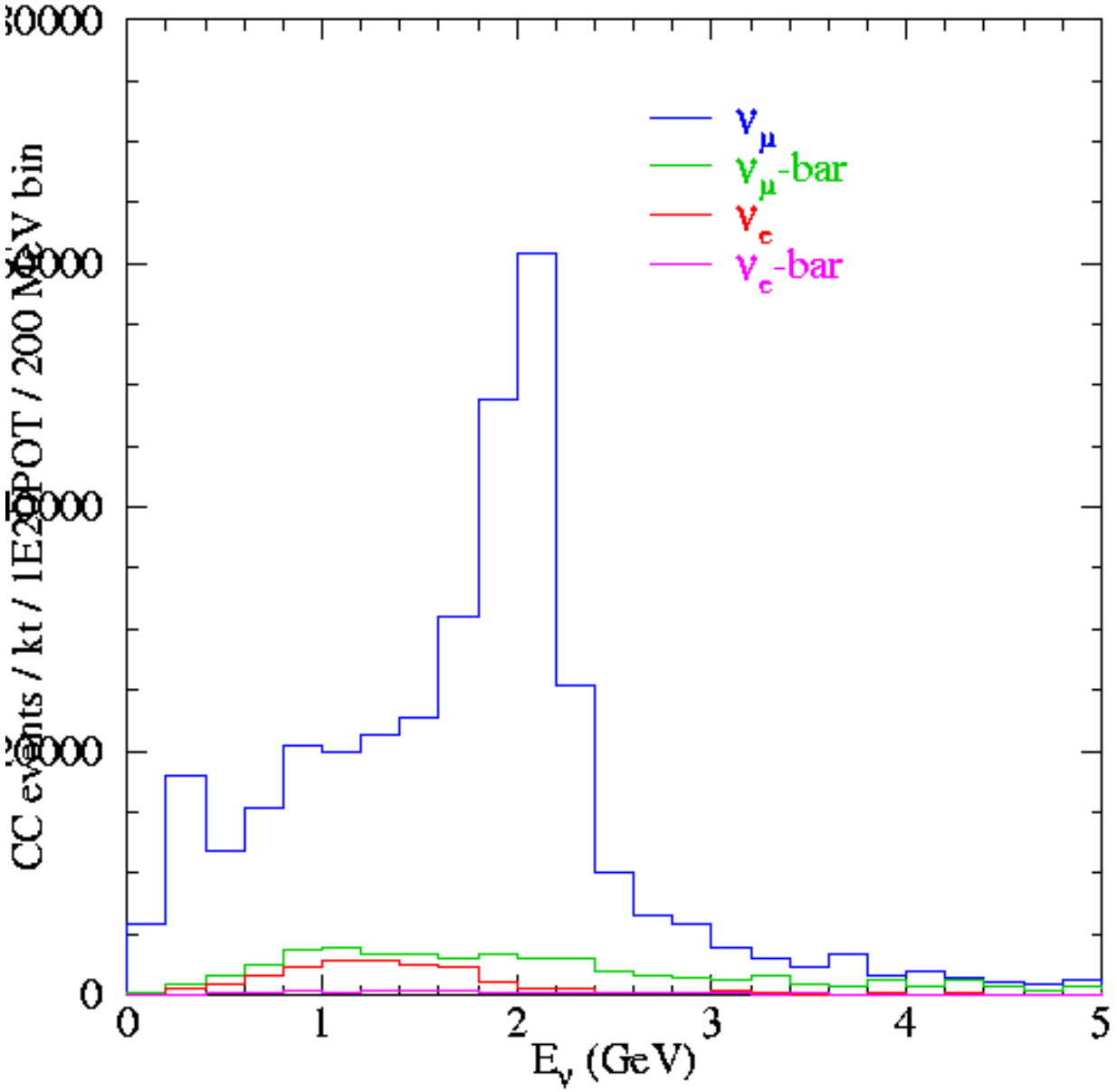
Alysia and Wes gave me the position of the center of the NuMI access shaft (x = -43.75 feet, y=315 feet, z=3052.2 feet)

Based on CDR, the front fact of the detector will be placed roughly 8 feet closer to the beam axis, and about 65 feet further upstream of this location. I've also taken a point 6 feet off the floor.

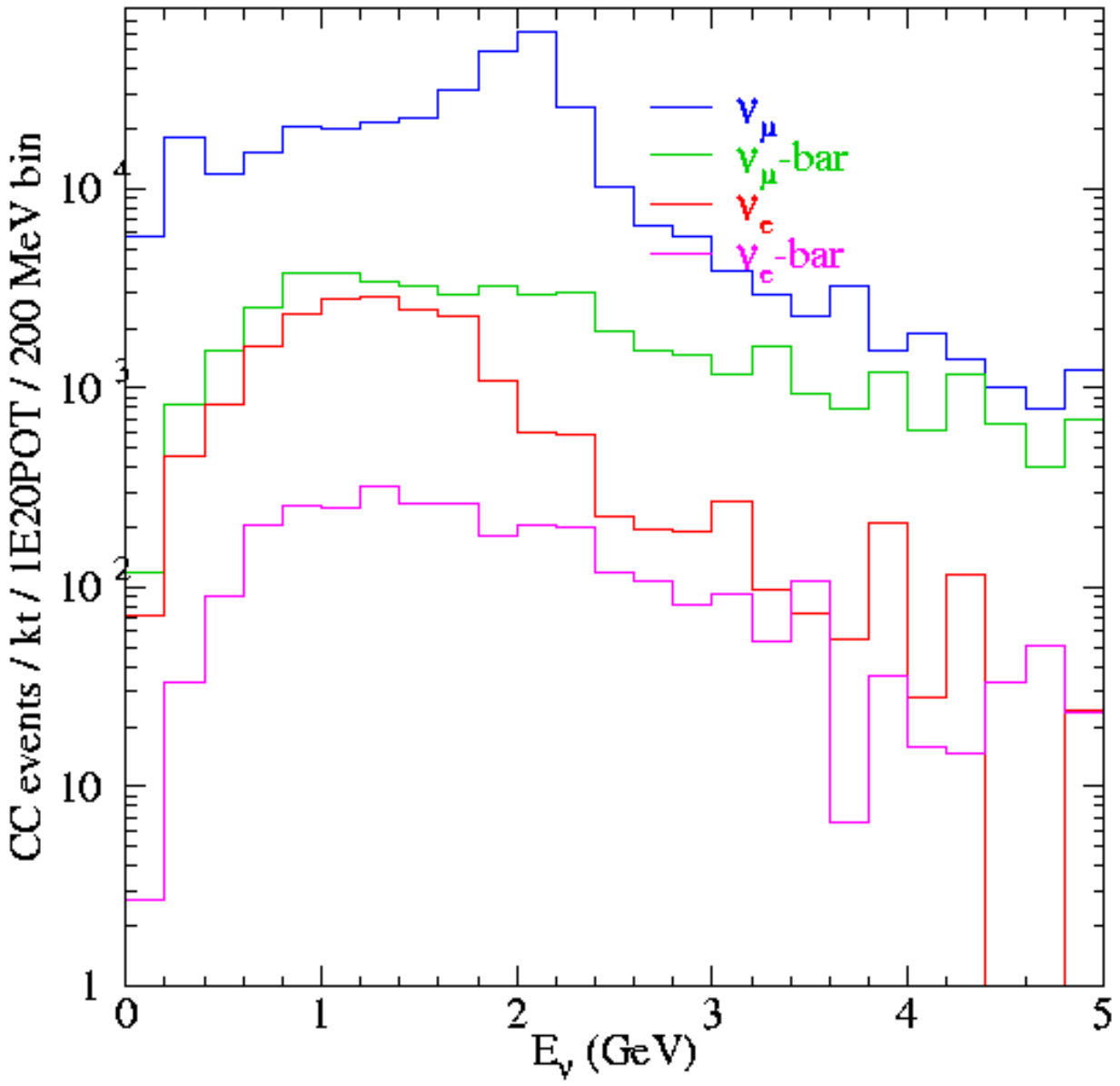
These give a location of x=-35.75, y=317.2, z=2987.3 feet
(x,y,z) = (-10.9, 96.7, 910.5) meters = 107 mrad off-axis

I've also updated the fluxes for the ND position which is located very close to the “38+50” station: (x,y,z) = (-7.73 m, -4.79 m, 966.5 m)

Event Rates In Surface Building: LE NuMI Tune



Event Rates In Surface Building: LE NuMI Tune



All fluxes collected here:

http://enrico1.physics.indiana.edu/messier/off-axis/spectra

(LE x ME) x (Ash River x Surface Building x ND) x (neutrino x anti-neutrino)

Format is text file expected by GLoBES program. 7 columns:
energy, nue, numu, nutau, nue-bar, numu-bar, nutau-bar fluxes

Also wrote a tool to give fluxes at any location up to 100 mrad off-axis which I hope will be useful for the BNL/FNAL joint study now underway. This uses pre-calculated fluxes at fixed locations (roughly every 2 mrad). Program interpolates fluxes in off-axis angle and then scales by 1/r^2. Spot checks indicate that its good to better than 10% for locations far enough away from NuMI (>100 km)