

# MIPP

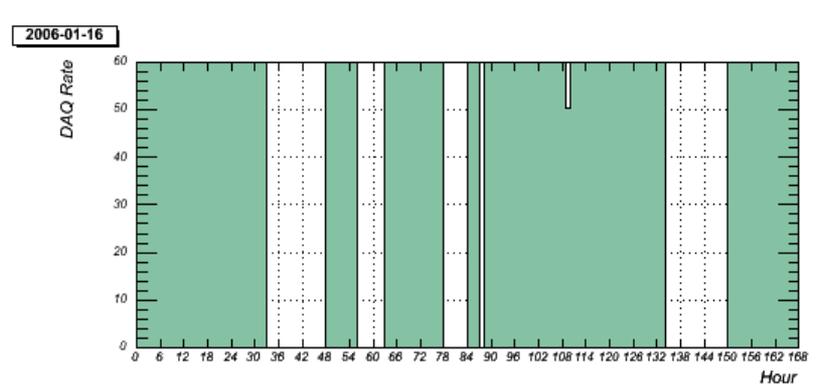
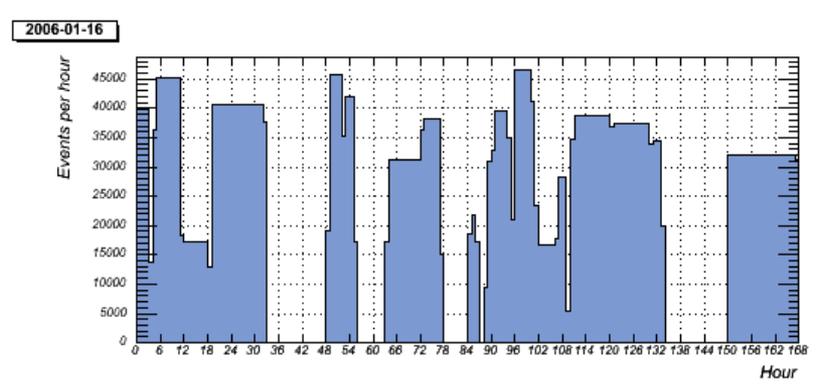
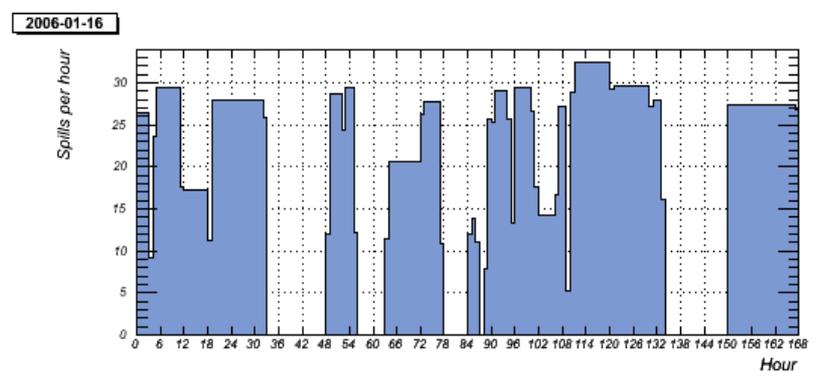
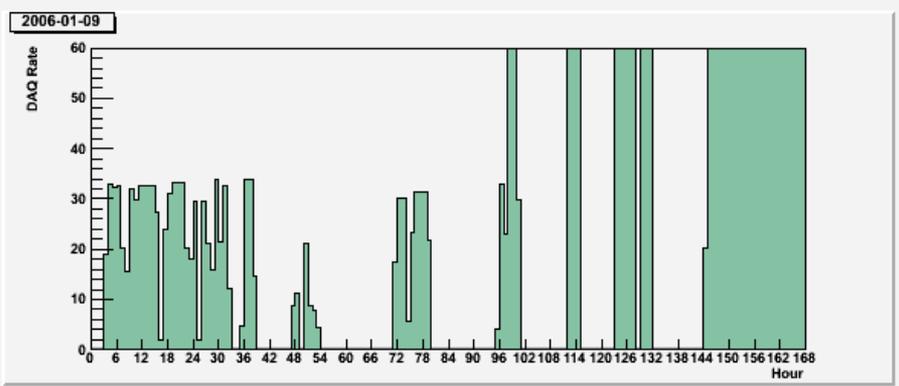
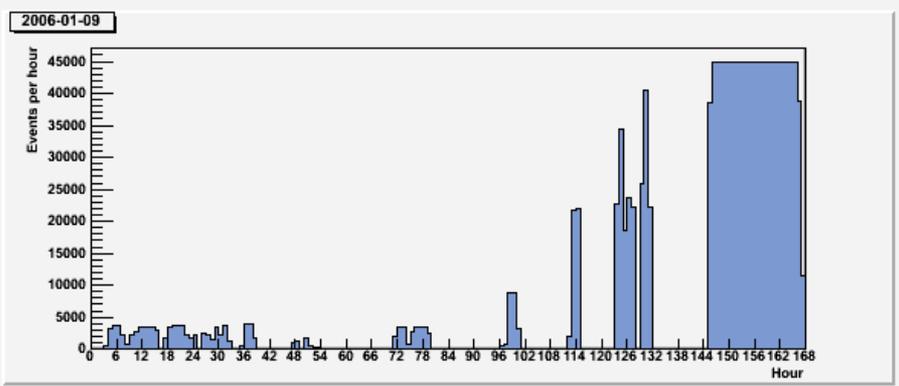
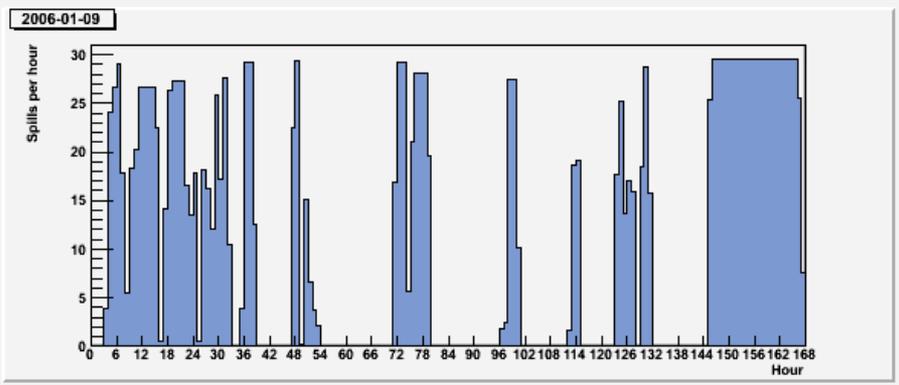
Nickolas Solomey

All Experimenters' Meeting

January 23, 2005

# News & Status

- Status since Jan. 8 through Jan. 22
- Plans for the upcoming week Jan. 23 through Jan. 29
- Jan. 9 the analysis magnet Jolly Green Giant sprung a water leak and a shorted coil
  - (now is the the not so Jolly Green Giant)
- Repairs to magnet took 1 week:
  - fixed water leak with cooled current bypass
  - one less turn out of 32 turns
  - this short and leak was on the new coil pack.
- Took data at night:
  - 2 nights of B-field off for tracking alignment near edges
  - Charged Kaon Mass by RICH ring data



# Data taken summary:

- Before magnet water leak we took 573 spills and 75,628 events with U, Bi and Cu at +59 GeV/c.
- After the water leak:
  - No beam during day for magnet repairs
  - Took two nights of B-field off alignment calibration data.

When life gives you lemons you make lemonaid.

- Changed to Charged Kaon Mass by RICH ring diameter (proof of principle and limitations):

5,446,380 events, sub divides as 2,700,000 with no field,

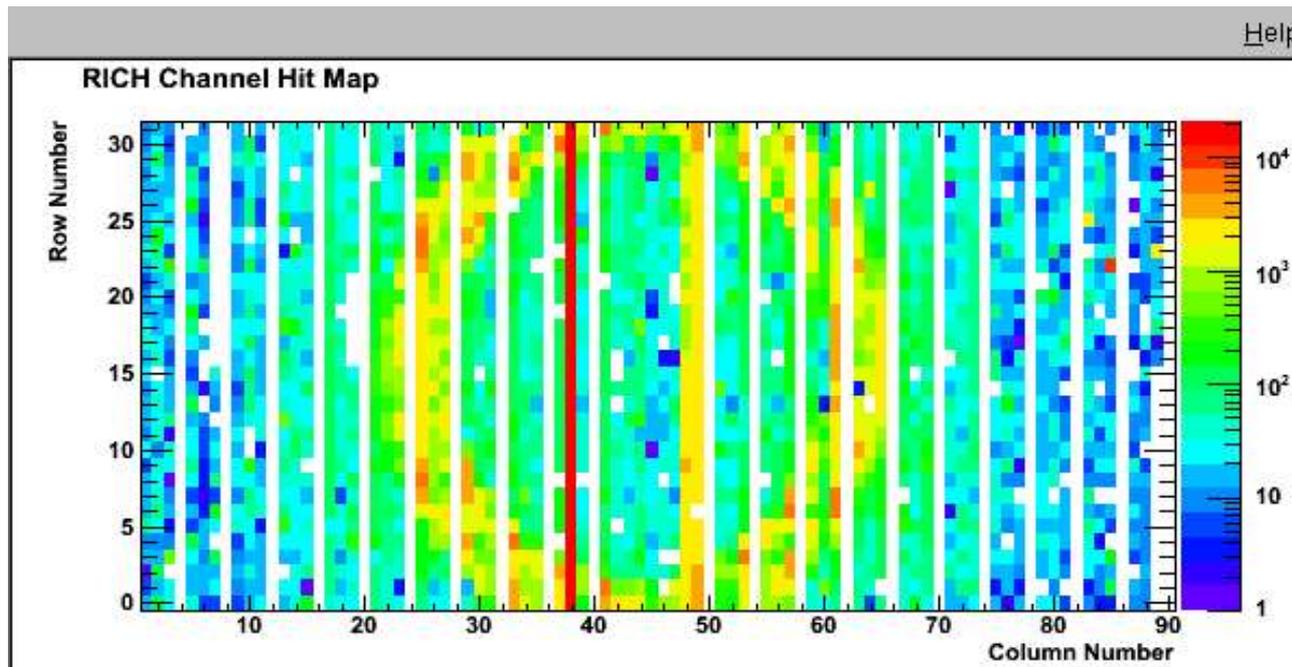
750,000 with field at +59 GeV/c

700,000 with field at +63 GeV/c

4829 spills of Charged Kaon Mass running.

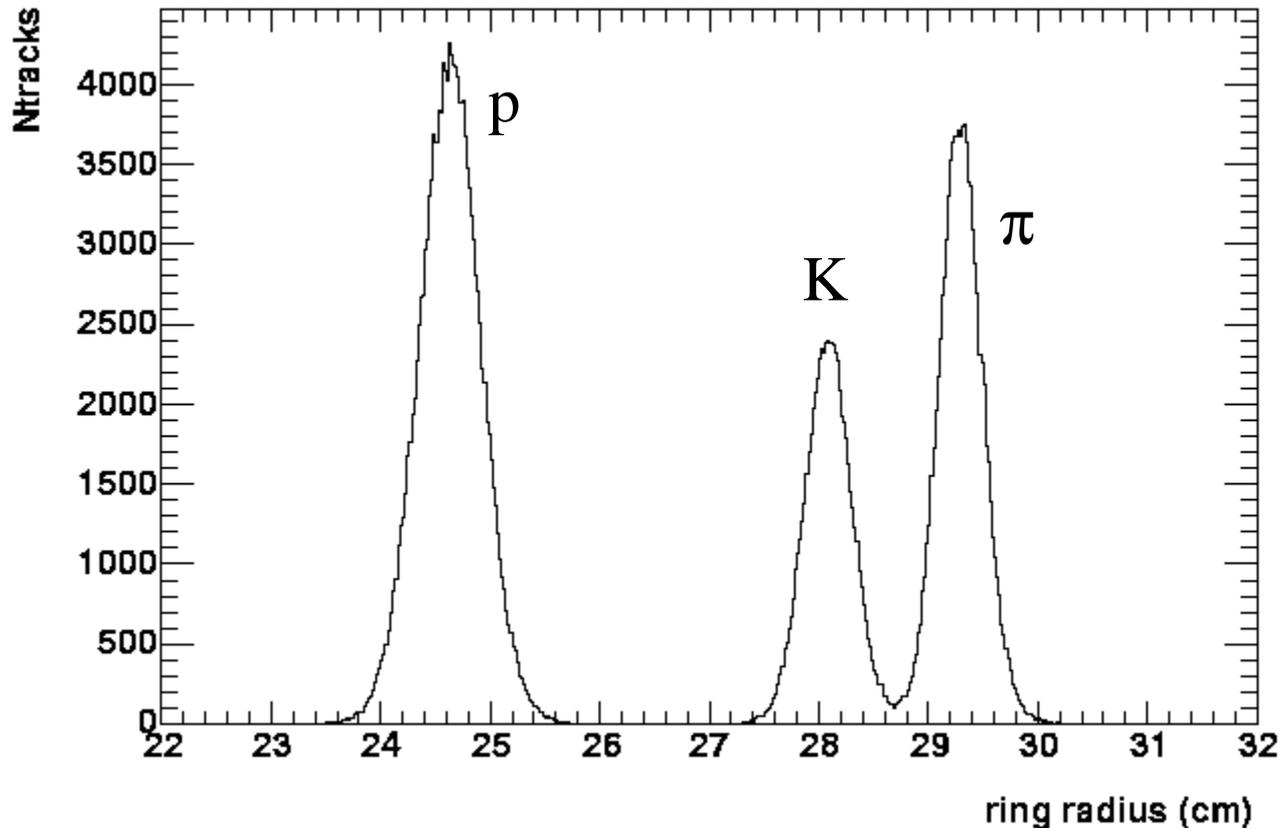
# Rich Ring Diameter Measurement for Charged Kaon Mass

- RICH Ring diameter proportional to:
  - Momentum
  - Inversely to Particle Mass



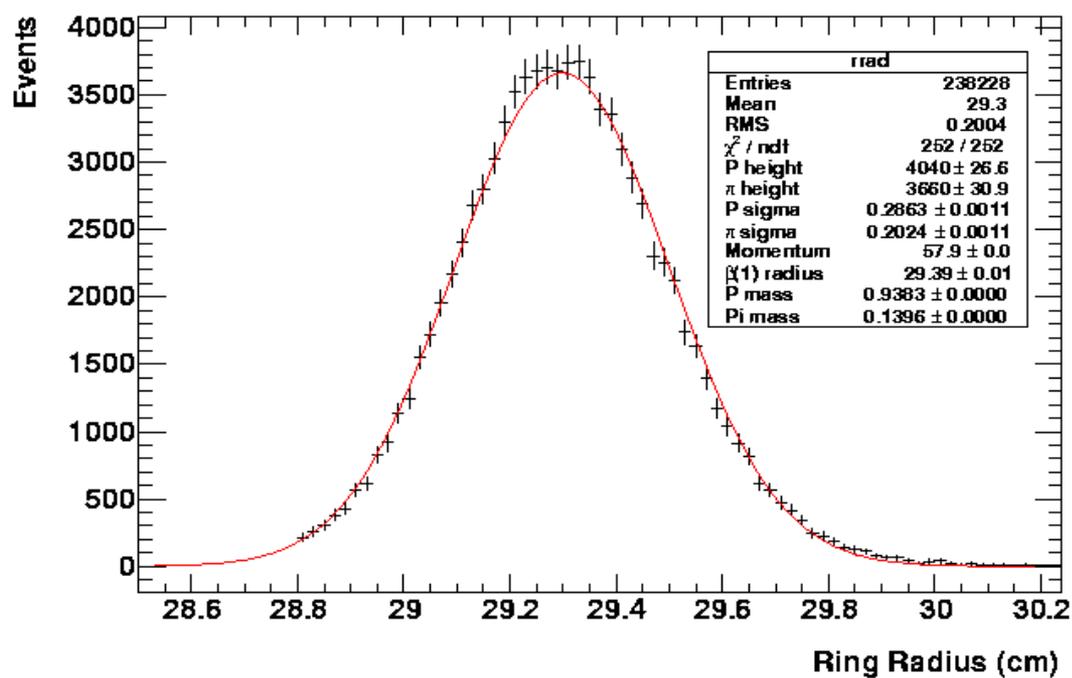
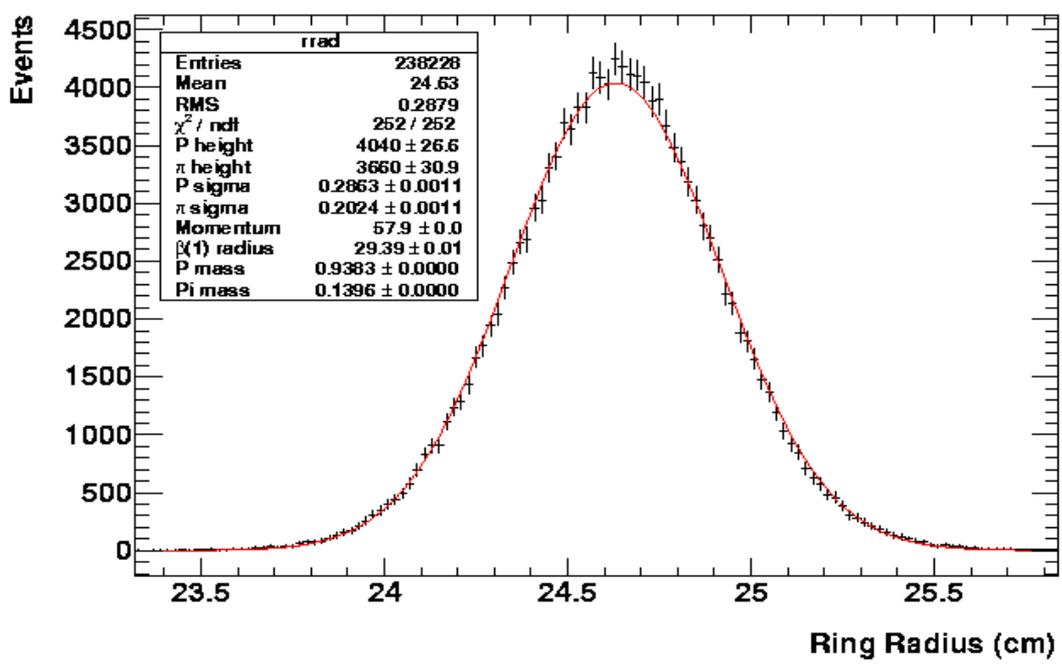
# RICH Ring Diameter

- We see the three particle species: pion, Kaon and Proton at our fixed Beam Momentum of +59 GeV/c
- Fits to the ring radius for known particle mass is very good.  
10x better than PDG mass.



# Fit to $\pi^+$ and p mass, keeping $K^+$ as blind

- Current fits to 700,000 events is 10x better than PDG mass, statistically.
- Can we control the systematic errors
  - $dE/dx$  energy loss
  - production spectrum momentum bite.



# Future plans for this week are:

- Finish Charged Kaon mass by RICH ring diameter systematic error calibration by end of Tuesday.
- Plan to then finish +59 GeV/c data taking on Uranium and Bi target.
- Change to -59 GeV/c data taking on Uranium, Bi and Cu target.