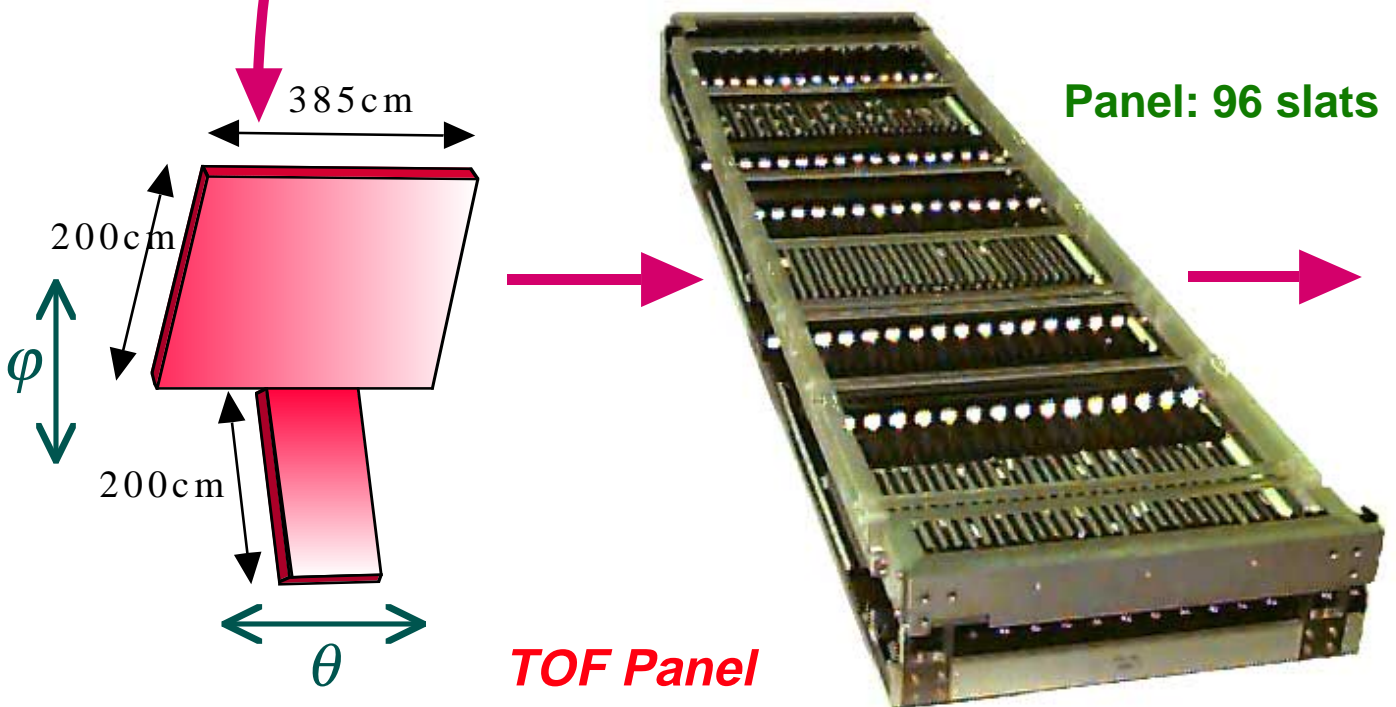
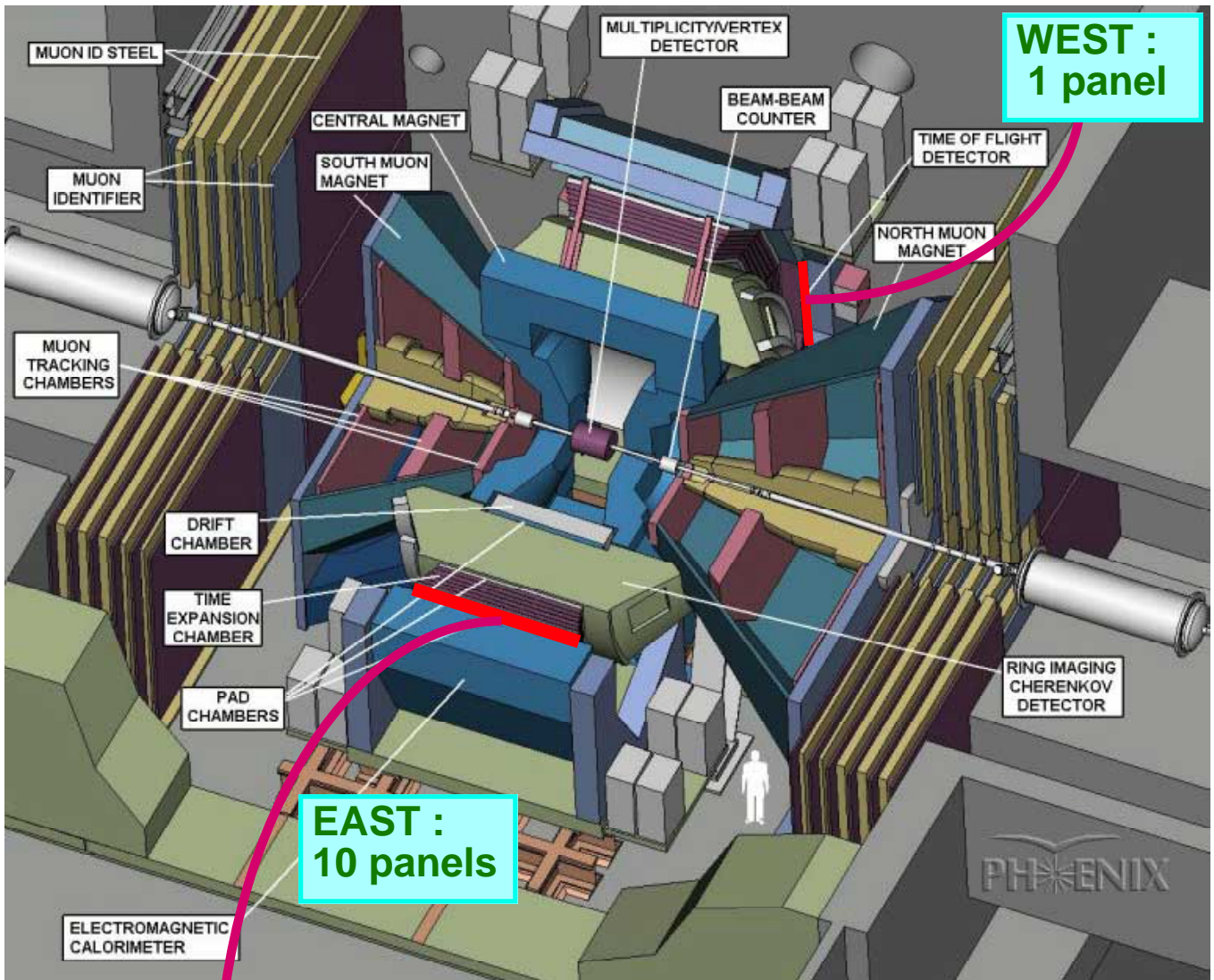
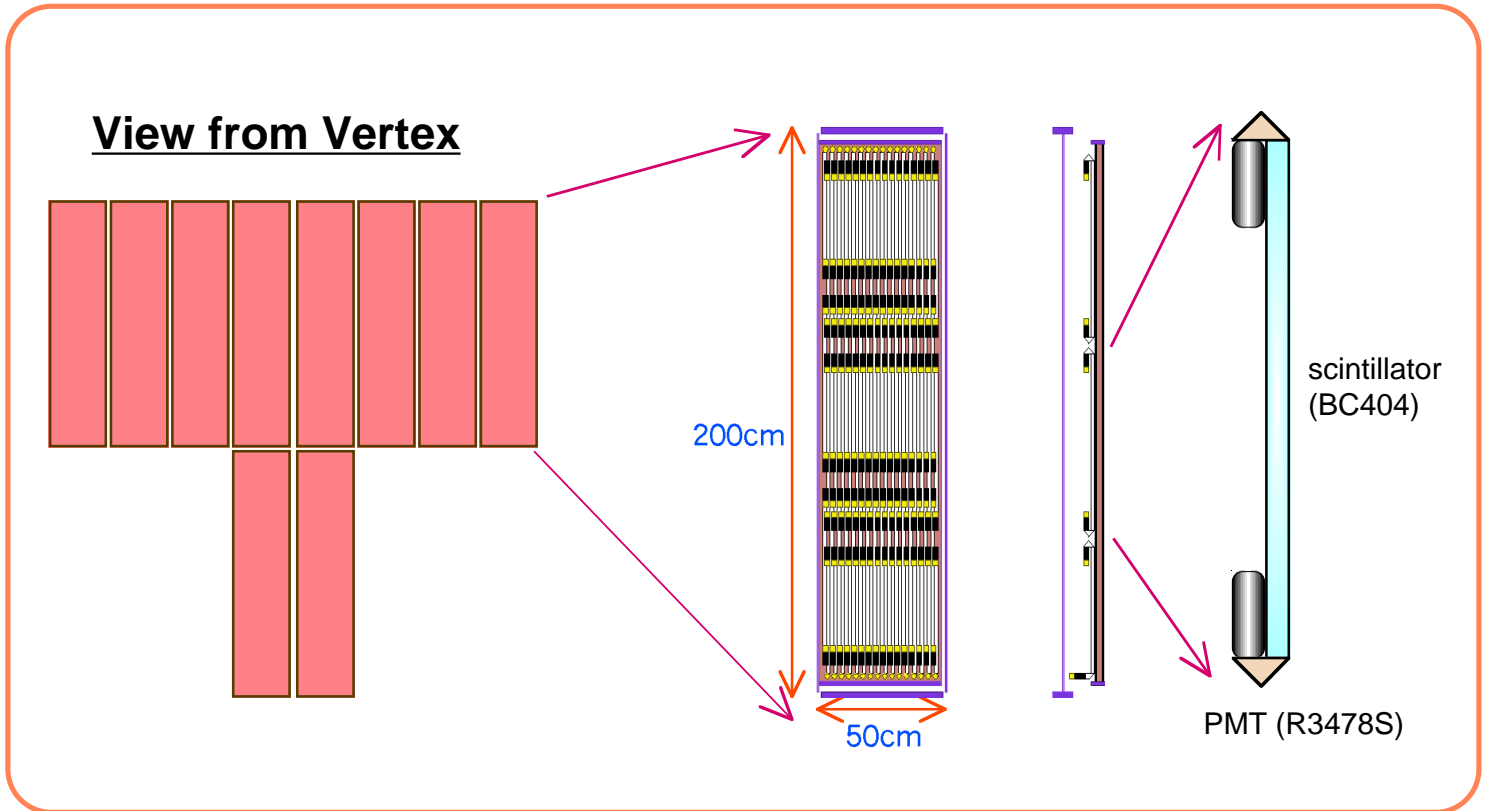


PHENIX TOF Detector



TOF Mechanical



Slat: Plastic scintillator with 2 PMT's (Bicron BC404)

PMT (Hamamatsu R3478S) and bleeder (with chip resistors)



Design Specification

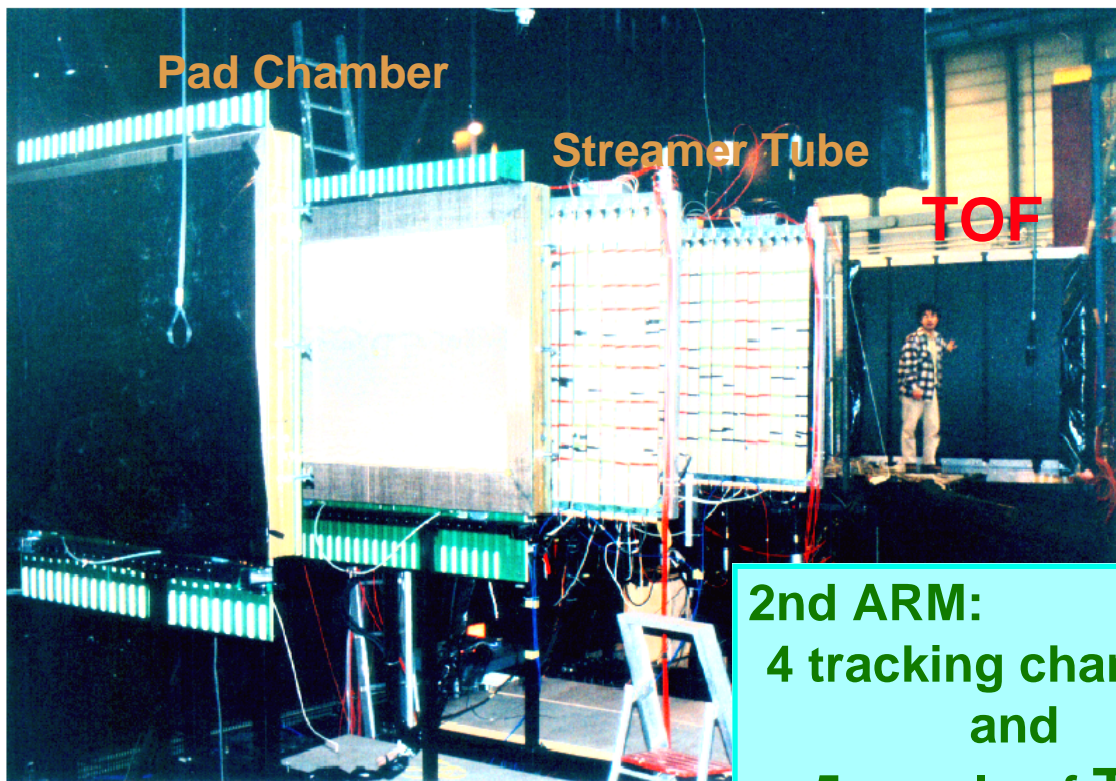
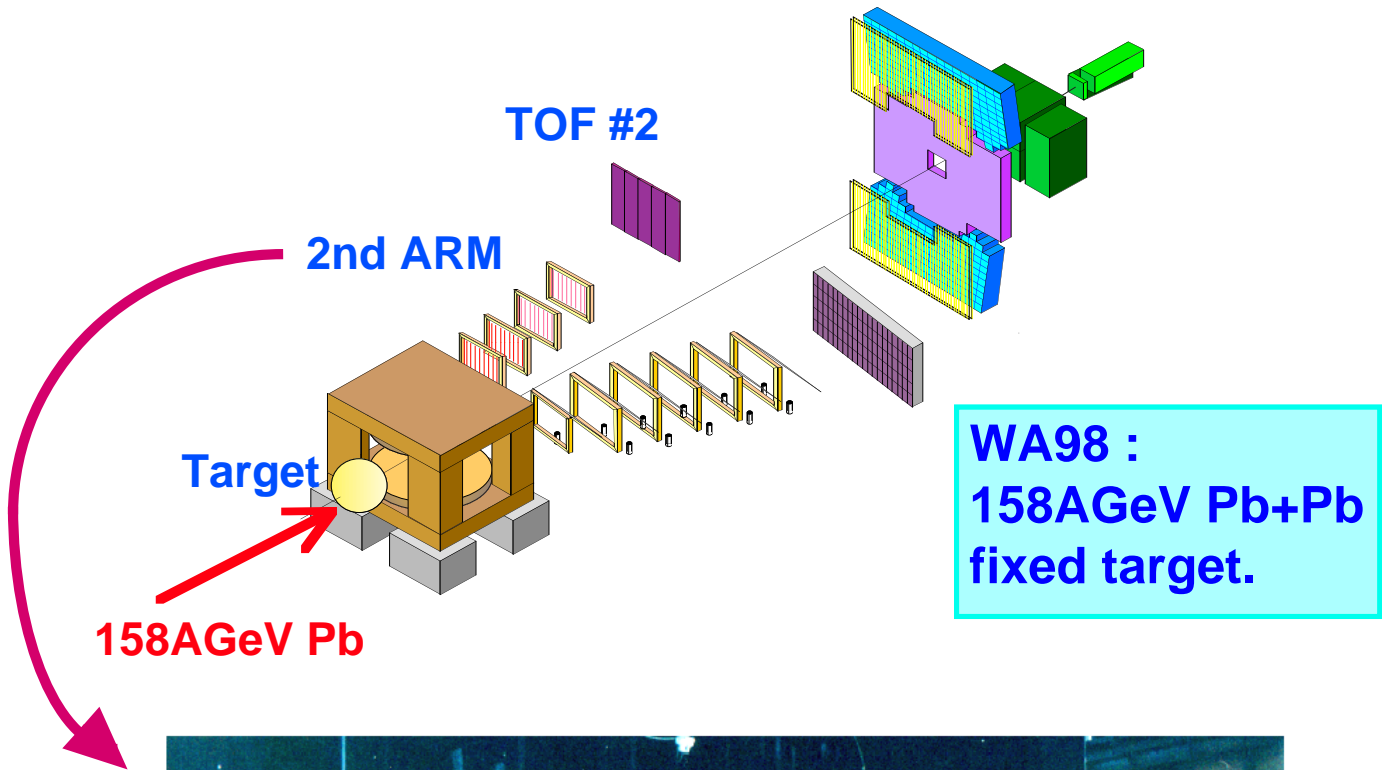
- **Location** ;
5 m from the vertex
- **Acceptance** ; driven by HBT and ϕ meson
 $\Delta\vartheta = 40^\circ$, $\Delta\phi = 45^\circ$ ($\Delta\eta = 0.7$) $\Omega \propto \frac{1}{3} sr$
- **Time Resolution** ; p_t distribution and ϕ meson
Resolution $\sigma \sim 80 ps$
 π / K separation to 2.4 GeV/c
 $K / p, \bar{p}$ separation to 4 GeV/c
- **Segmentation** ; keep the occupancy < 10 %
 $\frac{dn_{ch}}{dy} \cong 1500 \xrightarrow[\Delta\eta=0.7 \quad \Delta\phi=45^\circ]{} \approx 1000 \text{ segments}$

Construction



PHENIX TOF operated at CERN-WA98

5 panels installed in fall of '96



View from Upstream

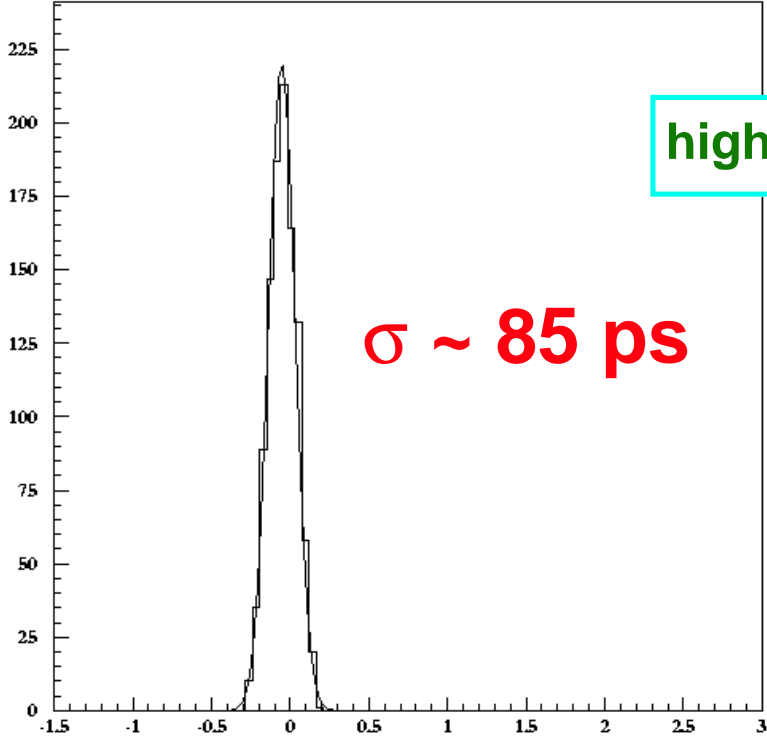
2nd ARM:
4 tracking chambers
and
5 panels of TOF

- Realistic tests of the PHENIX-TOF system in heavy ion beam.

TOF performance at WA98

Pb+Pb 158 A GeV collision

Counts

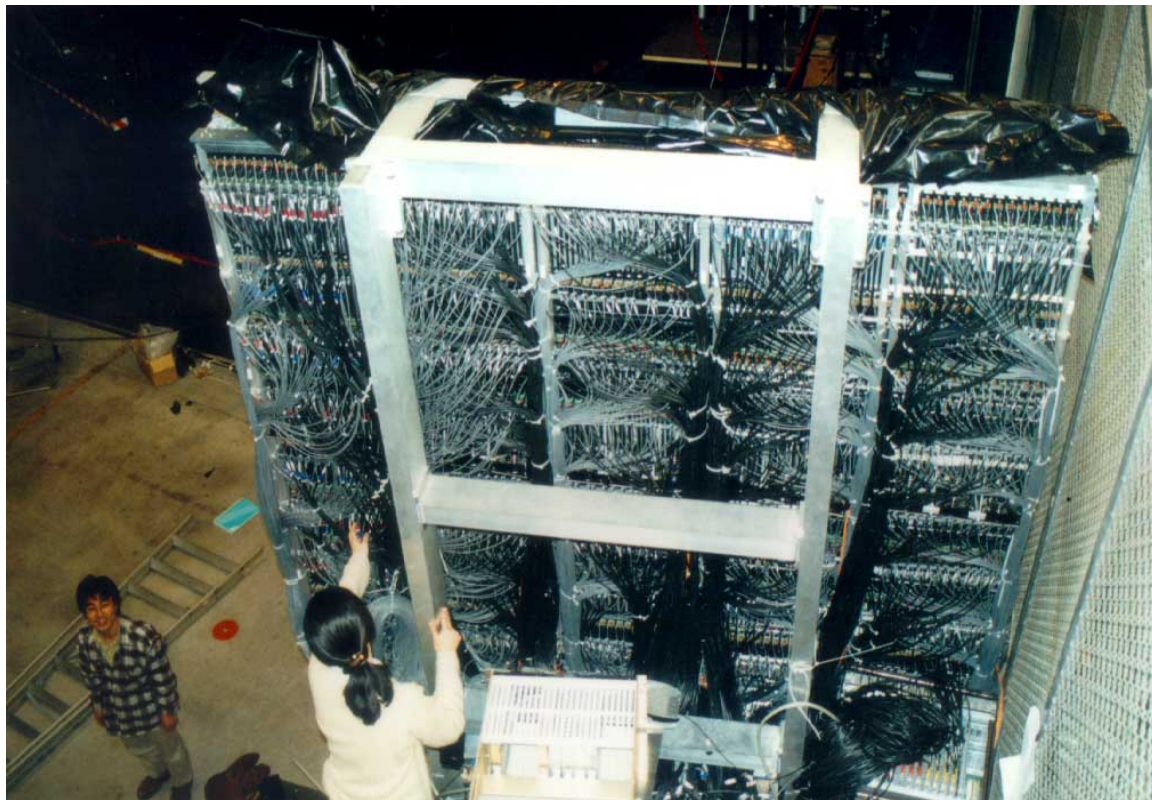


high momentum π

$\sigma \sim 85 \text{ ps}$

TOF resolution for all 500 slats were **85 ps**

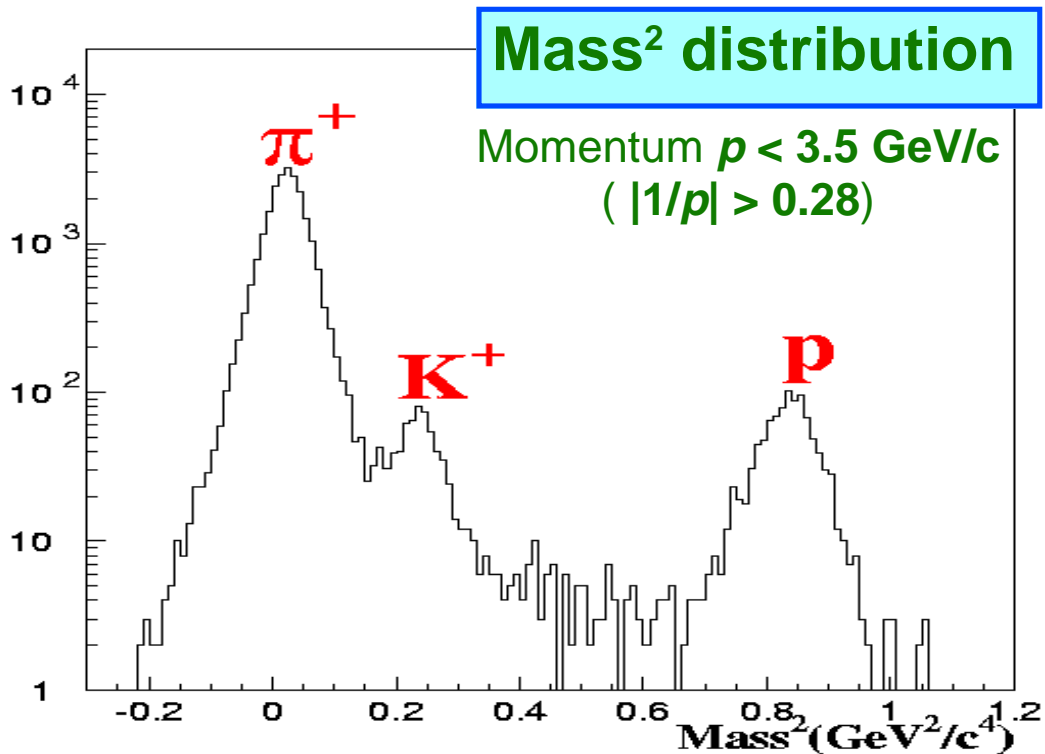
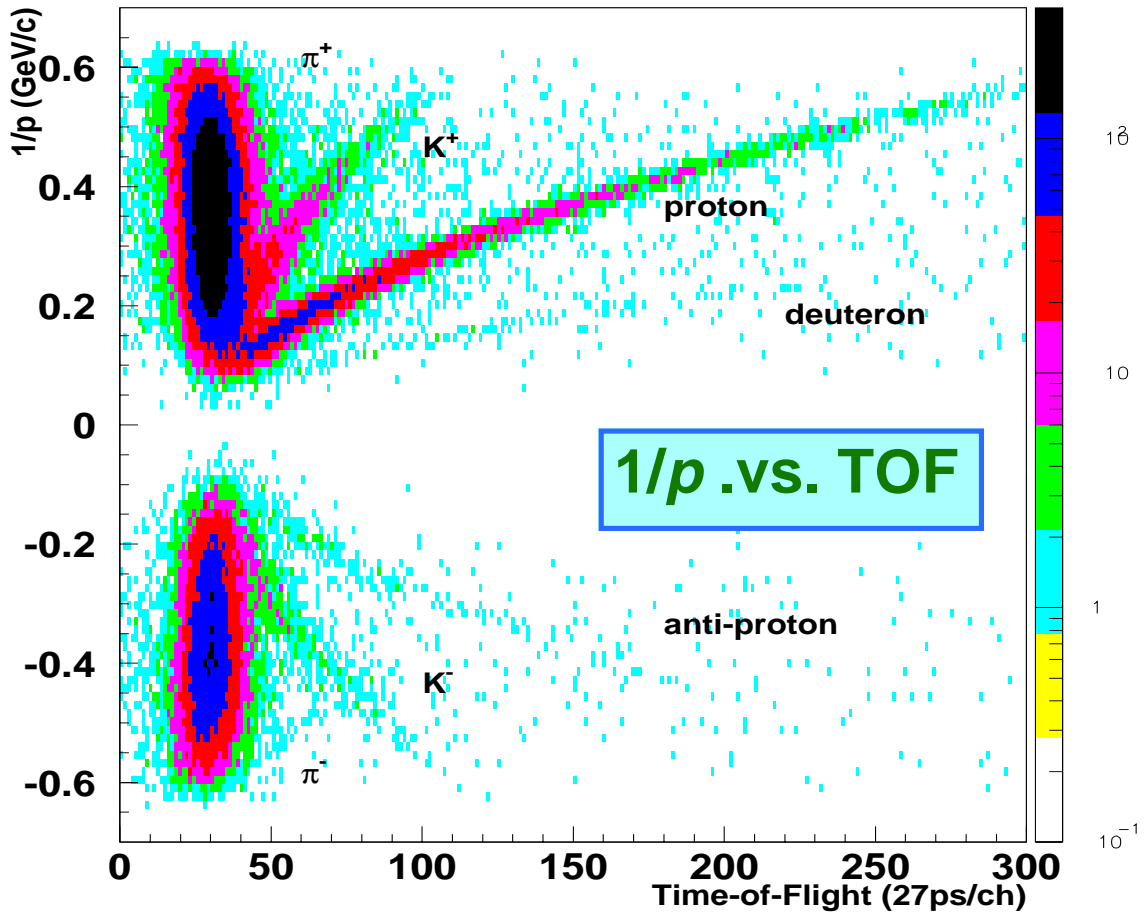
Time-of-Flight [ns]



View from Downstream

Particle Identification

WA98 Preliminary



➔ *Clear π , K , p separation*