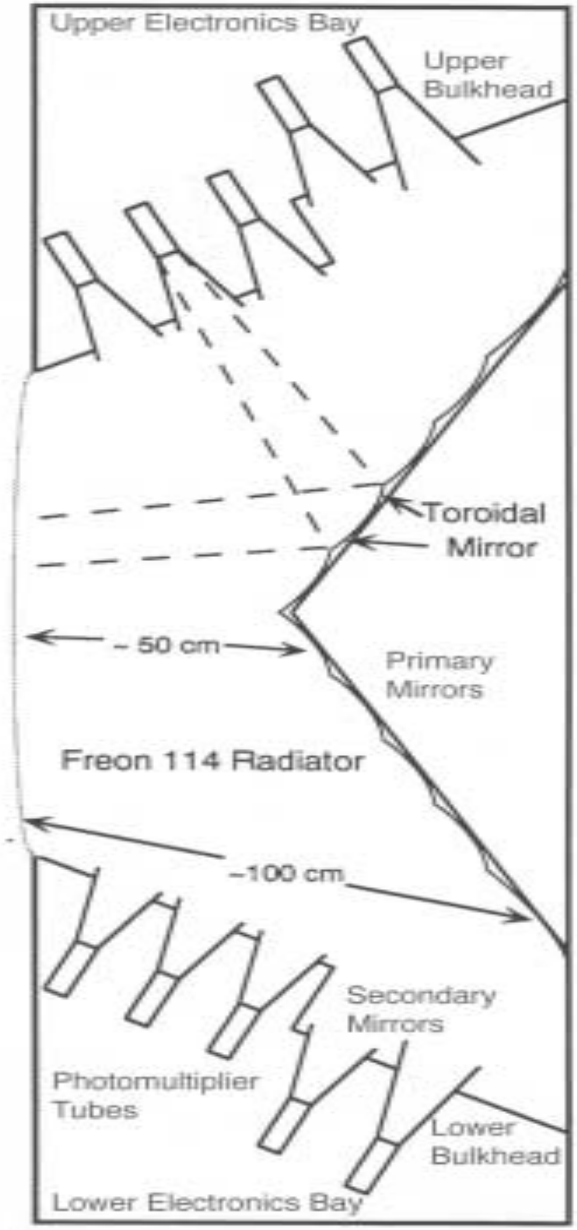
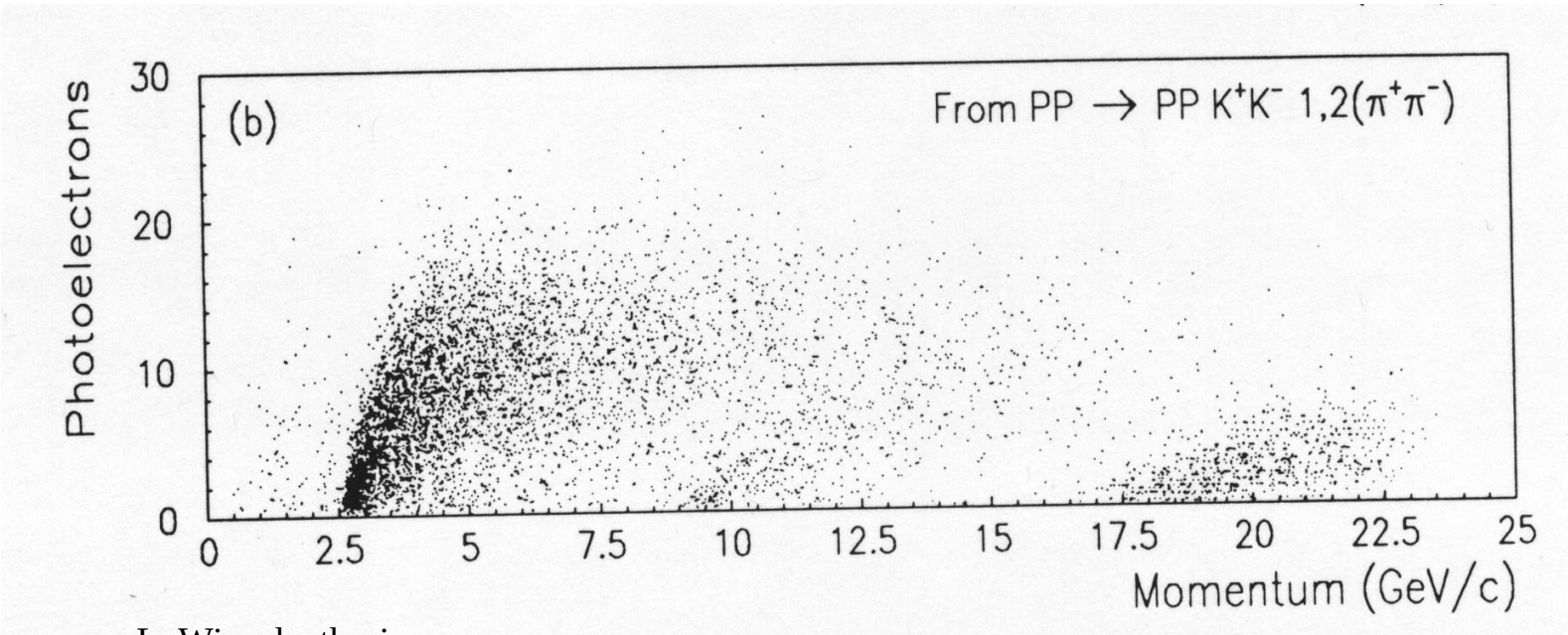
Ckov overview

- Gas threshold cerenkov counter
- With Freon114 radiator, particle thresholds:
  - Pi: 2.6 GeV/c
  - K: 9.0 GeV/c
  - p: 17 GeV/c
- Segmentation: 96 mirrors/PMTs
- Previous experience:
  - E766, E690, E910, E852



Ckov overview (II)

- Analog and digital (adjustable threshold) outputs
- Analog pulse height “counts” photoelectrons



L. Wieneke thesis

- Hope to achieve single photo-electron sensitivity for MIPP by using both analog/digital signals

ToDo list (I)

- Inventory detector parts
  - Check that mirror planes are not broken
  - Have everything in one place (currently MC6, PC4, highrise)
  - Would like to do this in MC7 and also as soon as practical
- Gas system
  - Are there practical alternatives to Freon-114
    - Pros: Past experience, index of refraction, not flammable
    - Cons: Cost, availability
  - Hope to use “bladder” to regulate pressure in chamber. If vessel is leak tight, we can fill once per run.
    - Need to check with 852 experience
    - Allowable emission level?
    - Volume: Approx 130 CF for vessel alone.

ToDo list (II)

- High voltage
  - Need to get FNAL approval for HV connectors/PMT base
  - Need power supplies (2).
    - 2200 Volts and 20 mA each. Should be no problem
  - Location for supplies?
- Low voltage
  - Need linear power supplies (2):
    - -5.2 Volts and >7 A each.
  - Have two from previous experiment. Need to verify if they are sufficient.
- PMTs
  - Setting up dark box in Lab6 to test existing PMTs.
  - Have spares from E690 hodoscope.

ToDo List (III)

- ADCs/TDCs
  - ADCs to read analog output from each phototube (96)
  - TDCs to get timing information from digital output
  - CAMAC
  - Need to decide on crate location
- Cables
  - HV/LV/output cables from phototubes to fanout (HV/LV) or patchpanel (output) exist.
  - Need to make cables from patch panel to ADC/TDCs. Patch panel output is BNC.
- Cart
  - Needed for mirror plane alignment and accessibility of vessel and neighboring chambers.
  - Ed corresponding with Ingrid on this issue

ToDo List (IV)

- Monte Carlo
  - Geometry in place (recycled from E910)
  - “Hits” are photo-electrons intersecting mirrors
  - Needs
    - Efficiencies
    - Output format
    - Integrate with general MC plan