



New ageing effects

Summary Session 2

- This session: new effects → effects in single photon detectors for RICH counters
- Single photons - exponential pulse height distribution, efficiency depends exponentially on the gas gain and electronics threshold
- Not all effects are new
- TMAE as gas additive:
 - most ageing results were already known by the 1986 workshop
 - new: combination of ageing and test beam checks
 - typically stands few mC/cm (depending on gas, wire diameter, gas system), much below the requirements in a hadron machine (HERA-B RICH: hundred mC/cm)



- TMAE, continued:

some recovery possible by heating up the wire in-situ
- see poster - but more studies would be needed

- CsI solid photocathode:

ageing due to environmental conditions (sensitive to water, oxygen) → careful installation procedure, tested over several years, in beams and at RHIC

runs up to 50-100 mC/cm² - depending on what photon yield you need

initial strong drop at high rate, with a subsequent full recovery is still not understood

no initial strong drop observed at low rate

- two more gas additives, TMA and EF, were examined for ageing, results look interesting