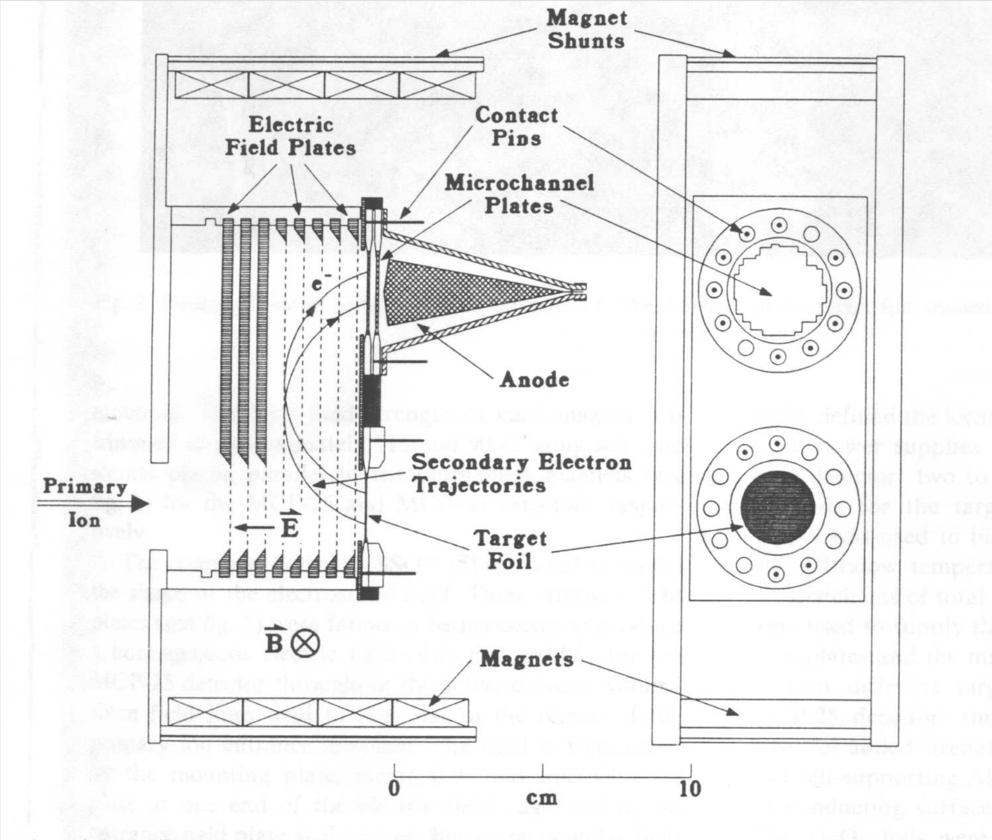
Time–of–Arrival Measurement

FNAL, Princeton, UCLA

- For the channel to work properly, particles must arrive in a small part (5%) of the rf cycle (–> ~ 60 ps).

- Best relevant σ_t achieved so far in a particle detector :



Krauss et al.
NIM A264 (1988) 327

Microchannel plate amplifi–cation

σ_t ~ 50 ps

- With a cherenkov radiator & improved electron optics believe we can get to σ_t ~ 30 ps –> adequate to select particles within Δt ~ 60 ps.

- Operation of Microchannel plate in 2T field believed to be OK .... but operation in a 3T fields needs to be demonstrated with a modern (small pore size) MCP. Plan to test this at Lab G in the Fall (need some designer help).