MRPC update

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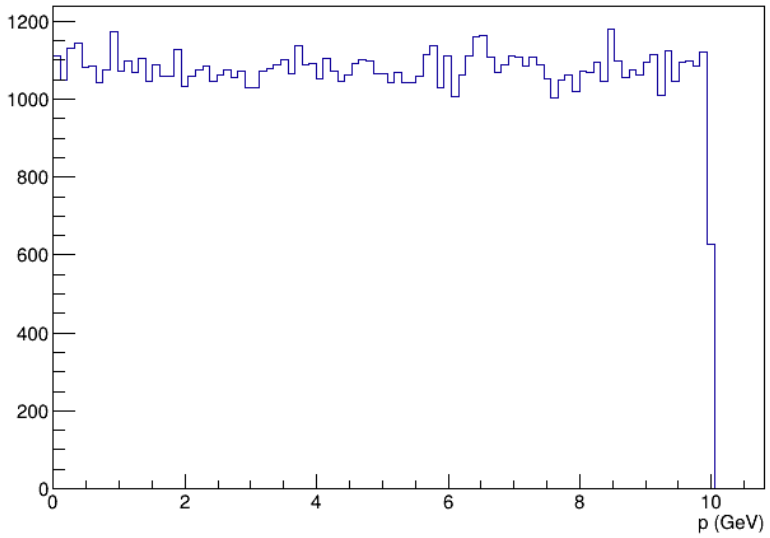
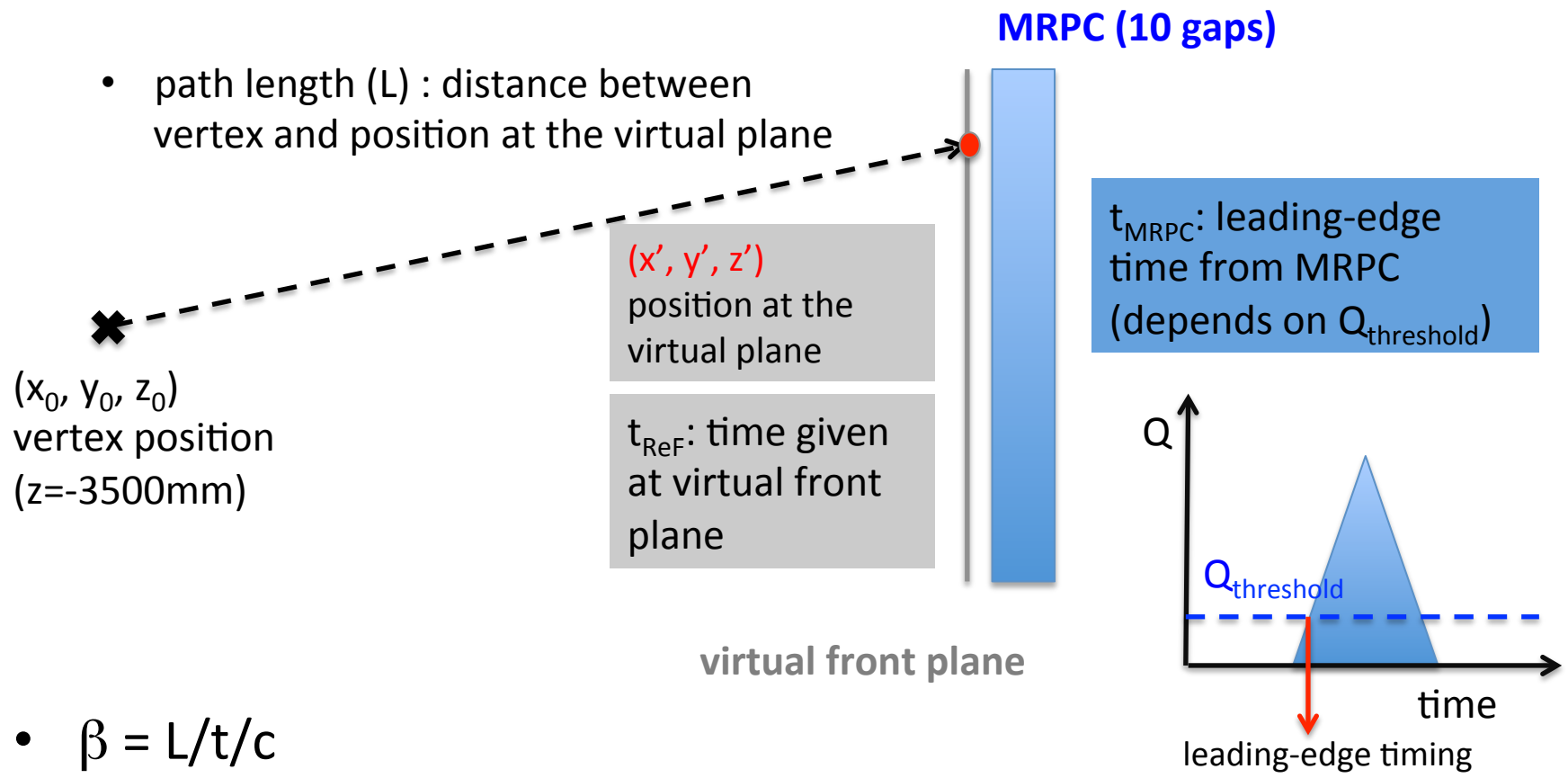
Single particle MC

- $K^{\pm}$, $\pi^{\pm}$, p, e
- Single particle generation at the target position (z = -3500 mm)
- Initial momentum range of [0, 10] GeV, flat p
- Select only prompt hadrons electrons by checking the track information

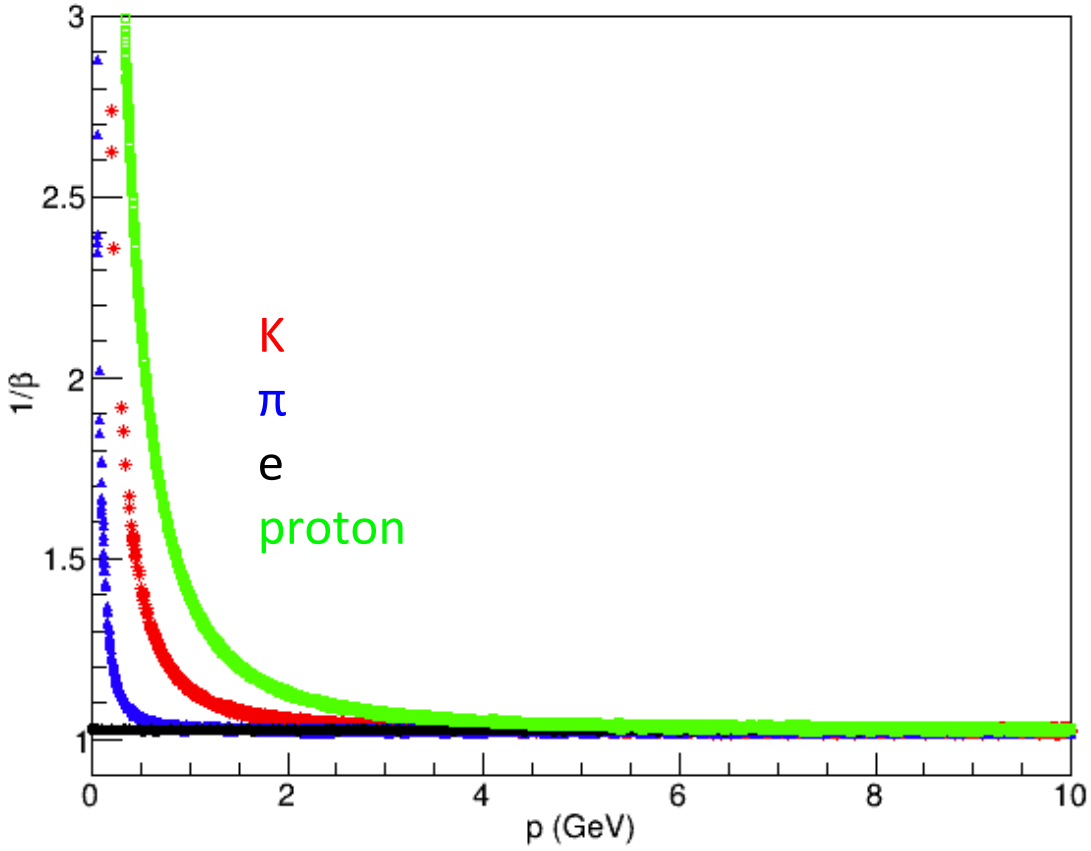


Single particle simulation



- $\beta = L/t/c$
- $t = t_{ReF} + t_{MRPC}$

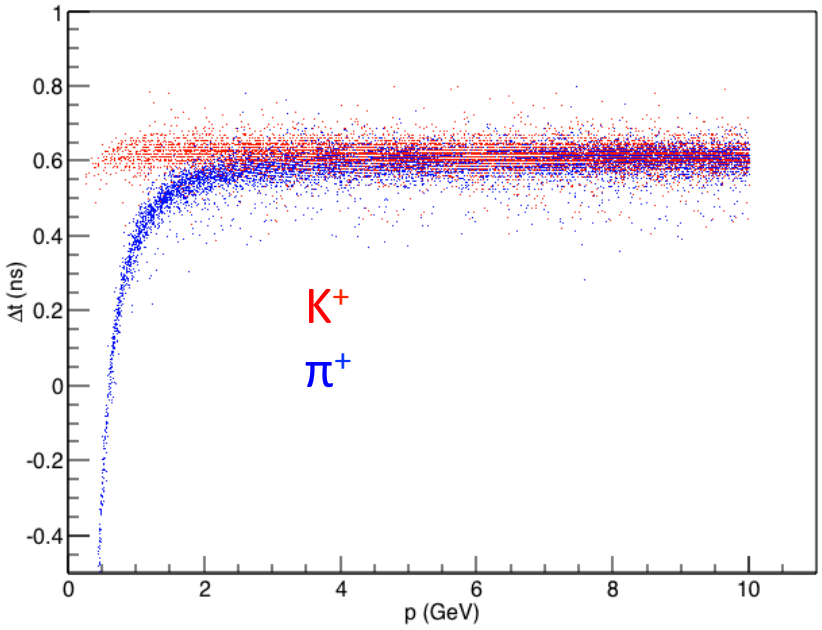
TOF PID

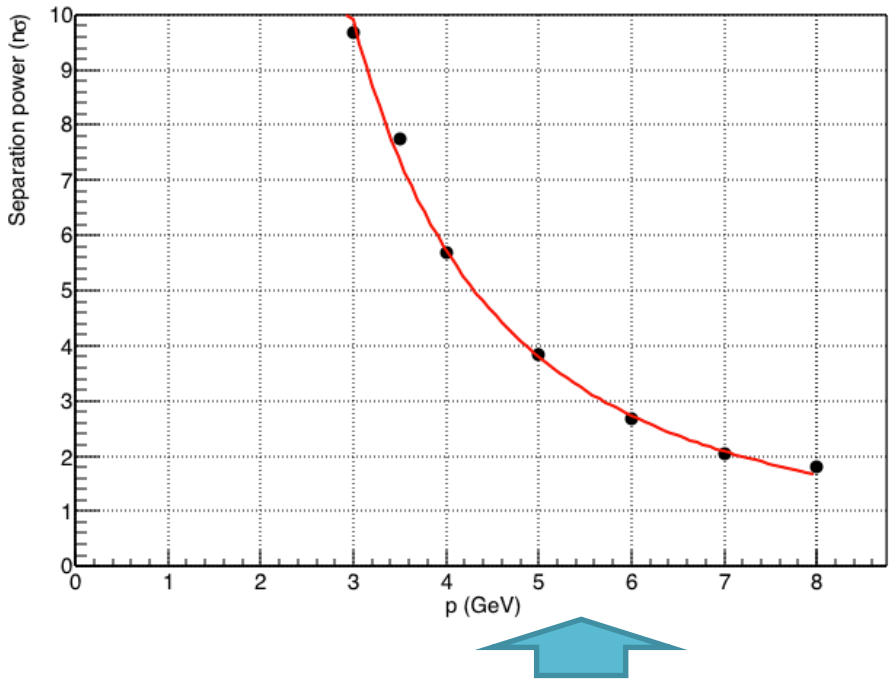


p/K separation

- Δt = time_measured (t_{Ref} + $t_{Leading}$) - time_expected

Separation power = $\frac{|t_p - t_K|}{\sigma_K}$



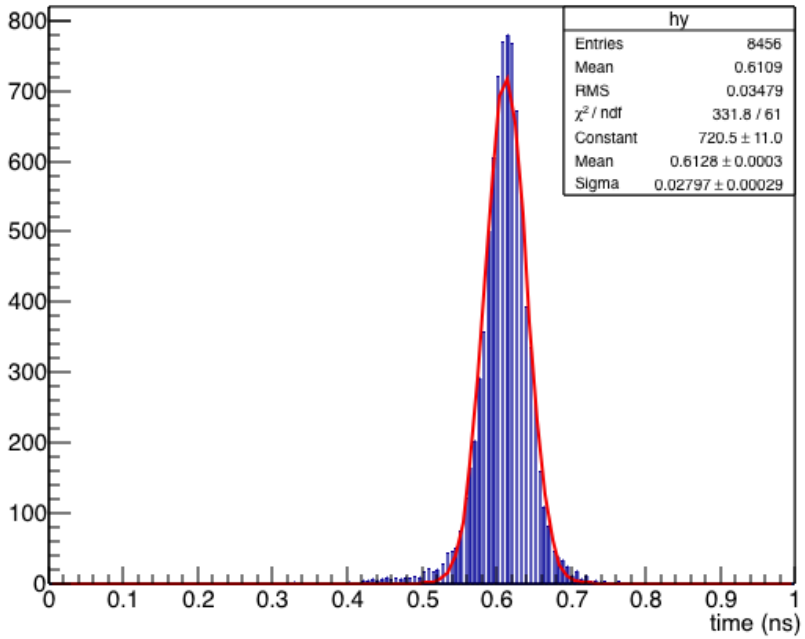


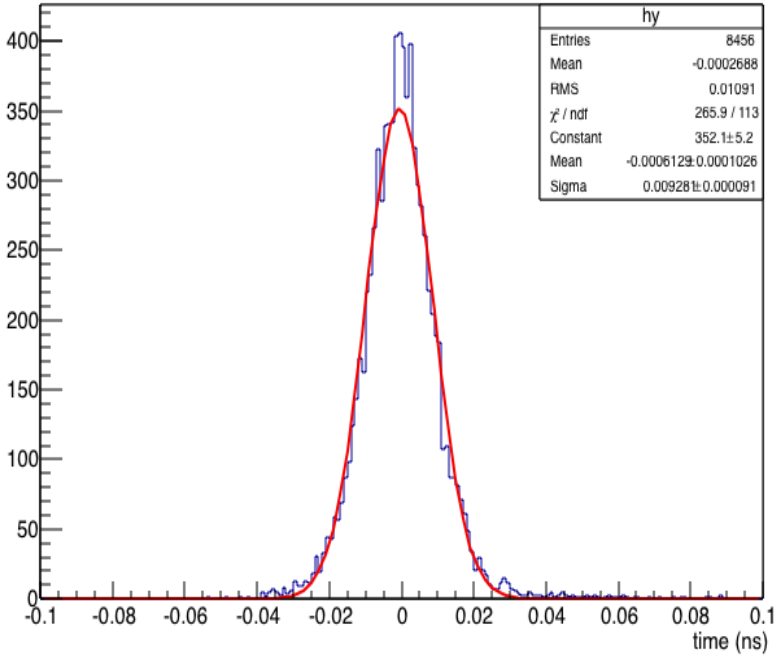
MC data points from a fixed momentum simulation. No time walk correction applied for time resolution here

Summary

- Initial look on the pion/kaon separation using MRPC simulation.
- Further implementation of other uncertainty sources for more realistic time resolution
- Finishing up the tech note

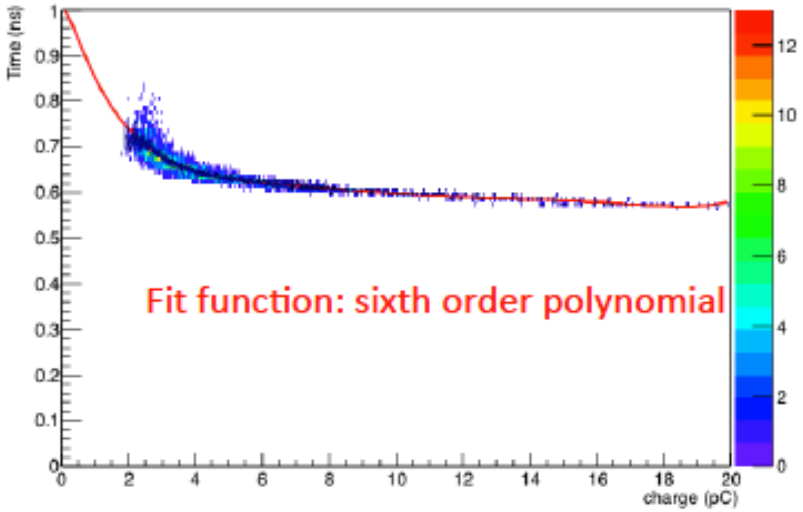
Slewing correction



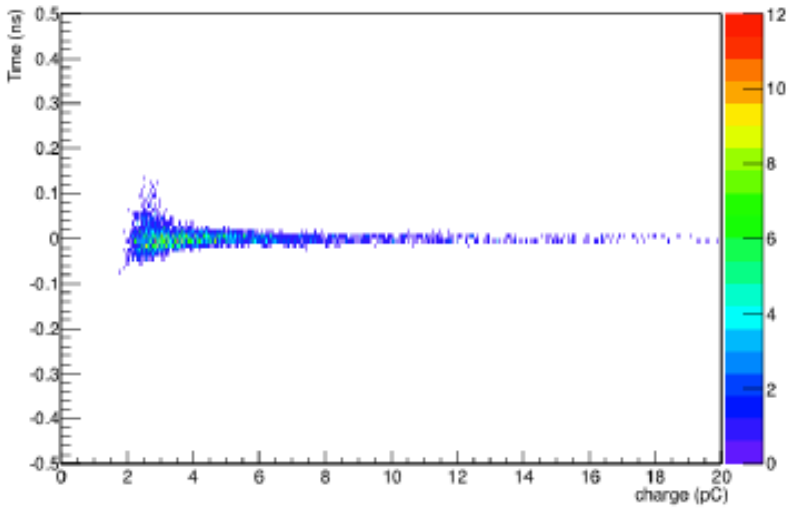


Slewing correction for MC

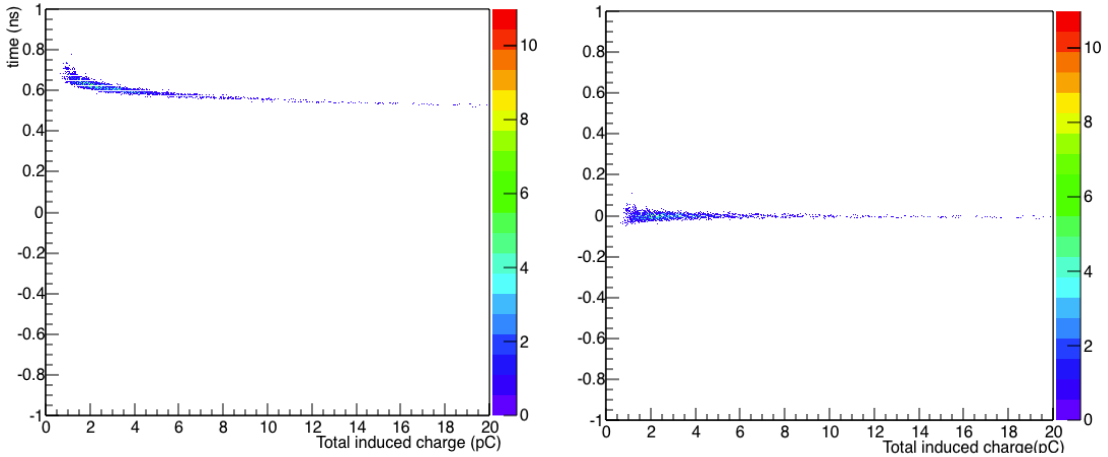
Before slewing correction

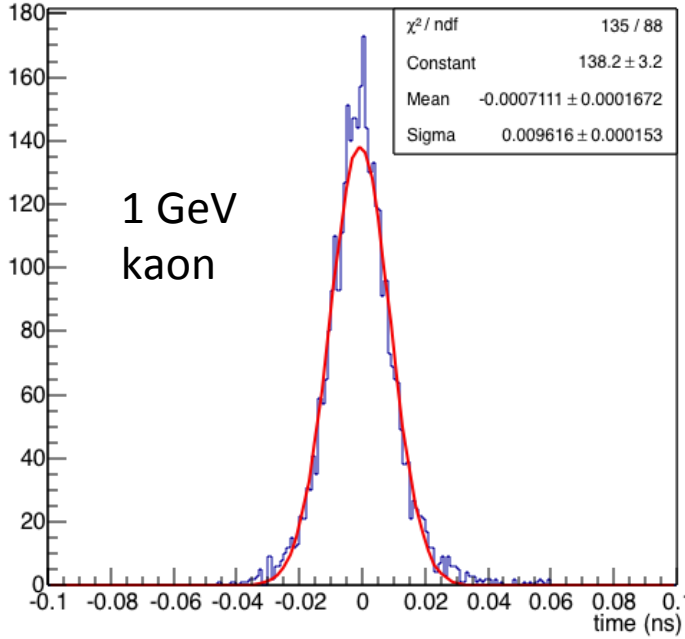


After slewing correction

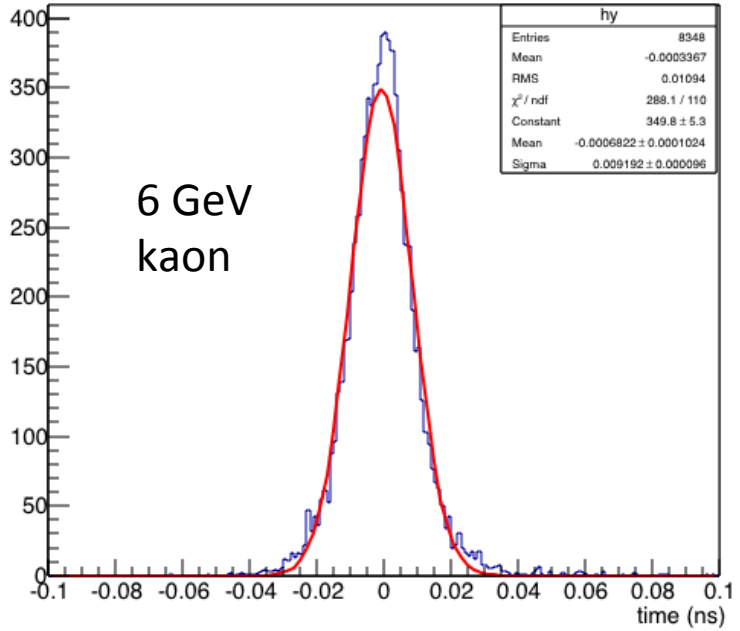


Slewing correction



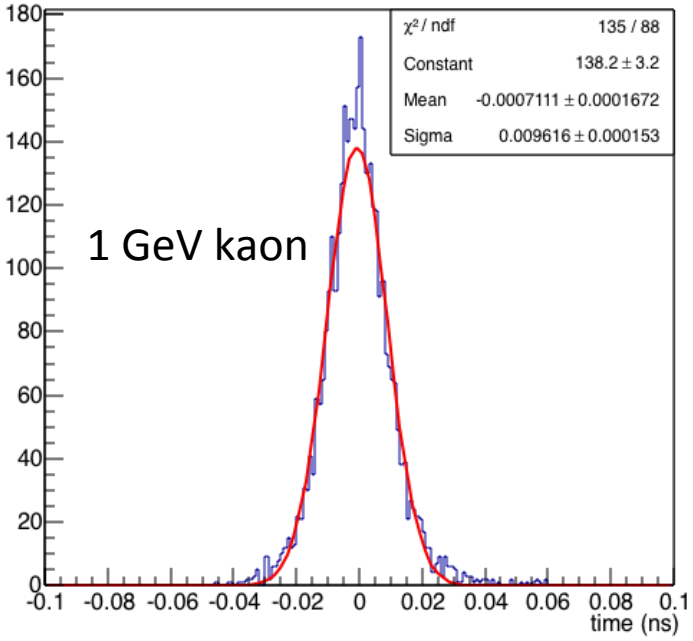


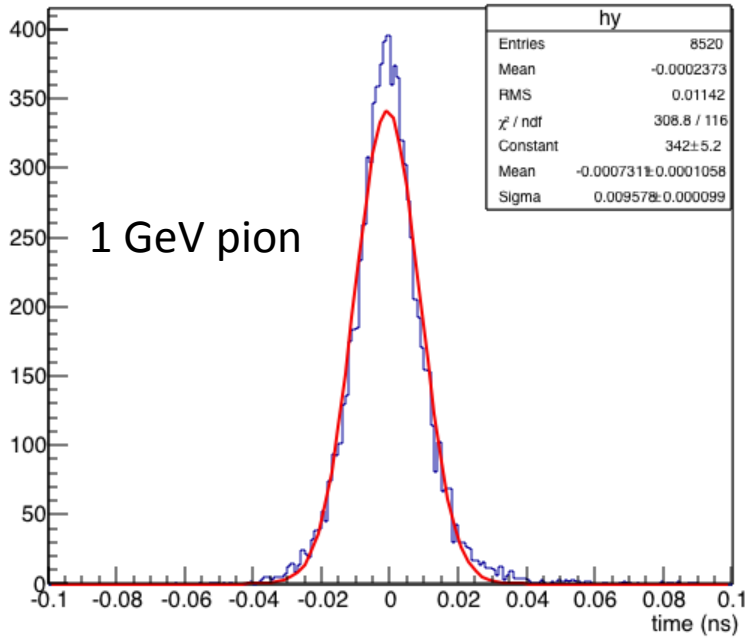
1 GeV kaon



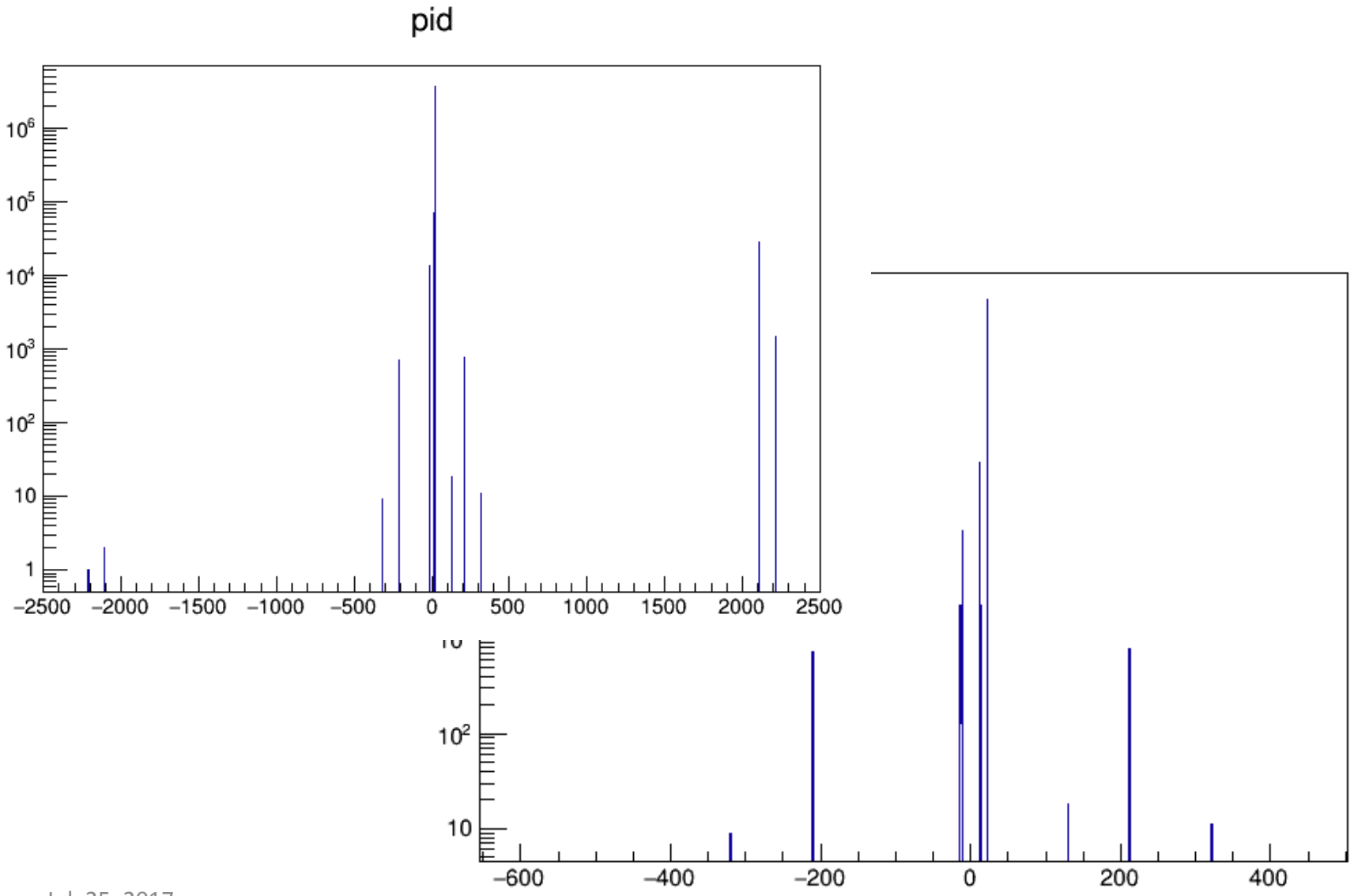
6 GeV kaon

Slewing correction





backup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BeamOnTarget