Uncertainties on A_N(pC)

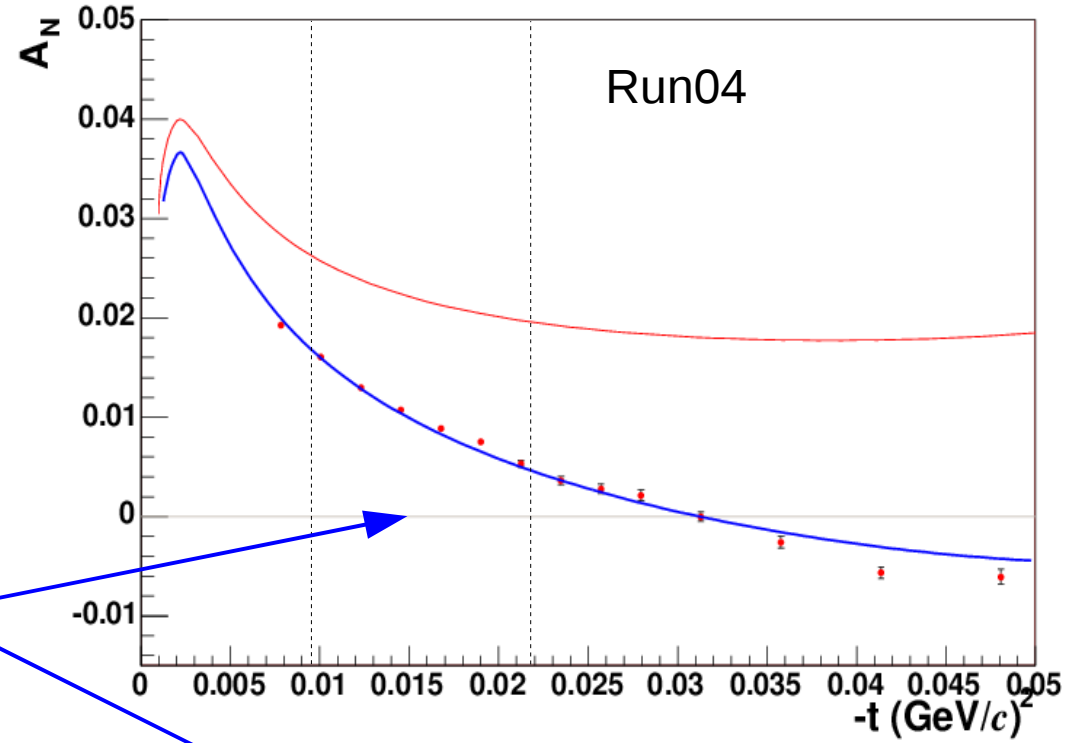
- Measure: $P \propto 1/A_N$
- Relative uncert.: $\sigma_P/P = \sigma_{AN}/A_N$
- From slope of $A_N(t)$:

  $\sigma_{AN}/A_N \approx 100\ \mathrm{GeV}^{-2} \times \sigma_t$

- In terms of kinetic energy T:

  $t = 2M_cT$; $0.4<T<0.9$ MeV

  $\sigma_{AN}/A_N \approx 0.24\% \times (\sigma_T/\mathrm{keV})$



- In terms of TOF τ : $T = M_c/2\ (L/\tau)^2$; L=0.6 nS; $75> \tau >50$ nS

@ T=0.4 MeV: $\sigma_{AN}/A_N \approx 2\% \times (\sigma_\tau/\mathrm{nS})$ ⇒ **for % uncert. on A_N**

@ T=0.9 MeV: $\sigma_{AN}/A_N \approx 8\% \times (\sigma_\tau/\mathrm{nS})$ **need < 1 nS uncert. on τ**

Uncertainties on A_N(pC)

- We measure: A_N(pC) relative to H-jet
- A_N(pC) measured in some range of t, or T, or τ
- For absolute t range need absolute value of $\tau = \tau_{meas} - \tau_0$

  $\Rightarrow$ determine in Si detectors from prompts $\tau_0 = \tau_{prompt} - L/c$
- For tracking e.g. fill-to-fill need *stable* t range

  $\Rightarrow$ only need to monitor relative τ_0, shifts

  $\Rightarrow$ can do with other detectors, stable (prompt?) pC signal