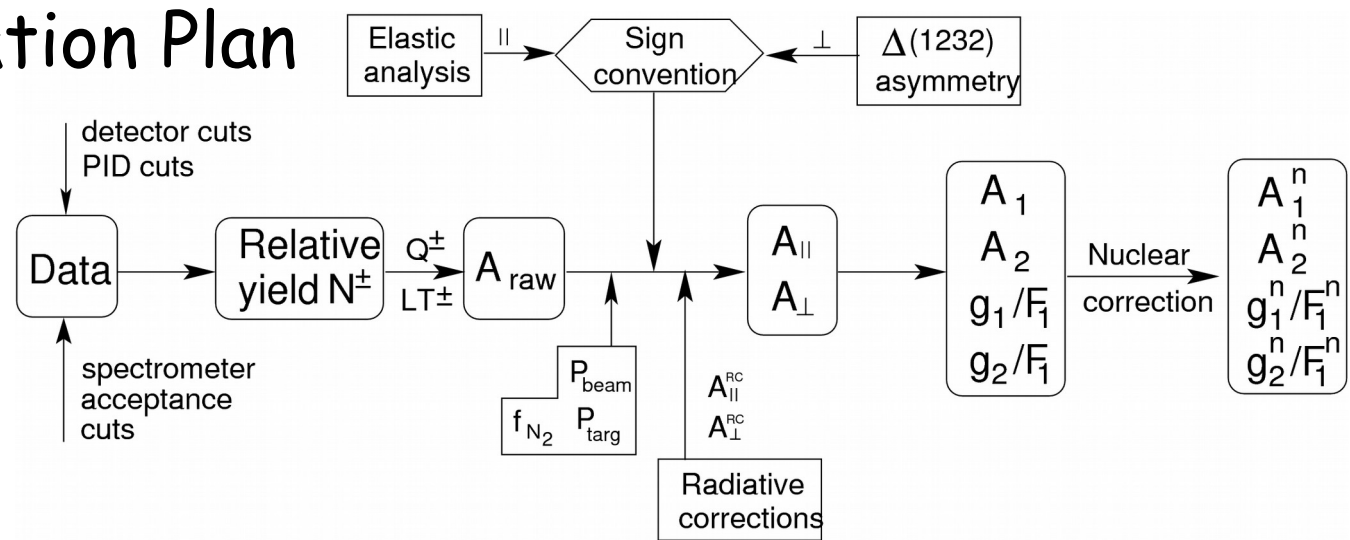# A_1^n Summary

Xiaochao Zheng, University of Virginia

5. Are the responsibilities for carrying out each job identified, and are the manpower and other resources necessary to complete them on time in place? (yes, see previous talks from today)

8. Has readiness for expedient analysis of the data been demonstrated? (see next talk). What is the projected timeline for the first publication? (this talk)

9. What is the status of the specific documentation and procedures (COO, ESAD, RSAD, ERG, OSP's, operation manuals, etc.) to run the experiments? – yes there is a draft for every required document, see wiki page

Running and Analysis Manpower Overview

- six PhD students:
  - A1n: Mingyu Chen (UVa/Zheng), Melanie Rehfuss (Temple U/Meziani), 1 TBD (Columbia/Hughes)
  - d2n: Junhao Chen (W&M/Averett), Shuo Jia (Temple U/Meziani), 1 TBD (Kentucky/Korsch)
  - 1 TBD (China)
- postdoc: Temple, UVa, W&M, JLab
- polarized 3He target lab: currently "run" by Kai Jin and Nguyen Ton (UVa/Zheng); Mingyu Chen (UVa), Junhao Chen (W&M), and possibly more students will be on-site and trained as target experts starting summer 2018.

Analysis and Publication Plan

- online scripts for PID, counting electrons and forming asymmetry
- Preliminary asymmetries expected within 1 month from end of run;

Elastic analysis — $\parallel$ → Sign convention ← $\perp$ — $\Delta(1232)$ asymmetry

detector cuts
PID cuts

Data → Relative yield $N^\pm$ — $Q^\pm$ / $LT^\pm$ → A_{raw} → $A_\parallel$ $A_\perp$ → A_1 A_2 g_1/F_1 g_2/F_1 — Nuclear correction → A_1^n A_2^n g_1^n/F_1^n g_2^n/F_1^n

spectrometer acceptance cuts

P_{beam}
f_{N_2} P_{targ}

$A_\parallel^{RC}$
$A_\perp^{RC}$

Radiative corrections

period	student #1	student #2	student #3
months 1-2	making good prod. run list	making good prod. run list	detector calib., fiducial cuts and efficiencies
months 3-4	optics calibration	detector PID cuts and efficiencies	target polarimetry analysis
by month 6	optics calibration / simulation	elastic and Delta analysis	target polarimetry analysis
by month 12	dilution and density/ relative cross sections	forming asymmetries – data set 1/2	forming asymmetries – data set 2/2
by month 18	radiative corrections	nuclear correction + finalizing systematics	nuclear correction + finalizing systematics

- draft publication (short) within 18 months of end of run → another 12 months to write the long archival paper