

d_2^n Analysis To-Do List

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Outline

- 1 LHRS
- 2 BigBite
- 3 Target

LHRS

- ① SAMC (\sim 2–3 weeks, based on statistics)
 - Update cross section model (F1F209 instead of QFS)
 - Add in multiscattering/finite acceptance effects into weight factor calculation
- ② Cross section fit systematic errors (\sim 1–2 days)
 - Diluted nitrogen, positrons and Born
- ③ Finite acceptance corrections (\sim 2–3 weeks, a lot of new code needed)
 - Bin cross sections in W , ν and x (10, 20, 50, 100 bins, etc.)

BigBite

- 1 Helicity-dependent live times (\sim 1–2 weeks)
- 2 π contamination in asymmetries (\sim 1 week)
 - $\pi^{+,-}$ in preshower
- 3 pair production contamination in asymmetries (?)
 - e^+/e^- ratio
 - Asymmetry corrections (\sim 1–2 days)
- 4 Radiative corrections (?)
- 5 Geant4 simulation (?)
 - Acceptance
 - e^+/e^- ratio
- 6 Asymmetries (\sim 1 week)
 - W cuts (DIS, resonance) (\sim 3 days)
 - Acceptance effects (before and after shower summing module fix) (\sim 2 days)
 - 0-track events (?)
- 7 Systematic errors (\sim 2 weeks)
 - Electron cuts

Target

- 1 Compile cell characteristics for depolarization effects (~ 1–2 days)
- 2 Apply the diffusion equation to EPR data (~ 2 days)
- 3 Flux through Aqua and Samantha cells (~ 1 week)
- 4 Double-check NMR history (~ 1 day)
- 5 Interpolate NMR data (~ 1 week)
- 6 Magnetic field correction (?)
- 7 Correct the density for temperature dependence (?)
- 8 Water target (~ 1 week)
 - Temperature correction (~ 2 days)
 - Fit background with quadratic, compare to linear (~ 2 days)
 - Fit NMR y-channel (~ 2 days)
- 9 Fit ^3He NMR x- and y-channels (~ 2 days)