Strategy meeting

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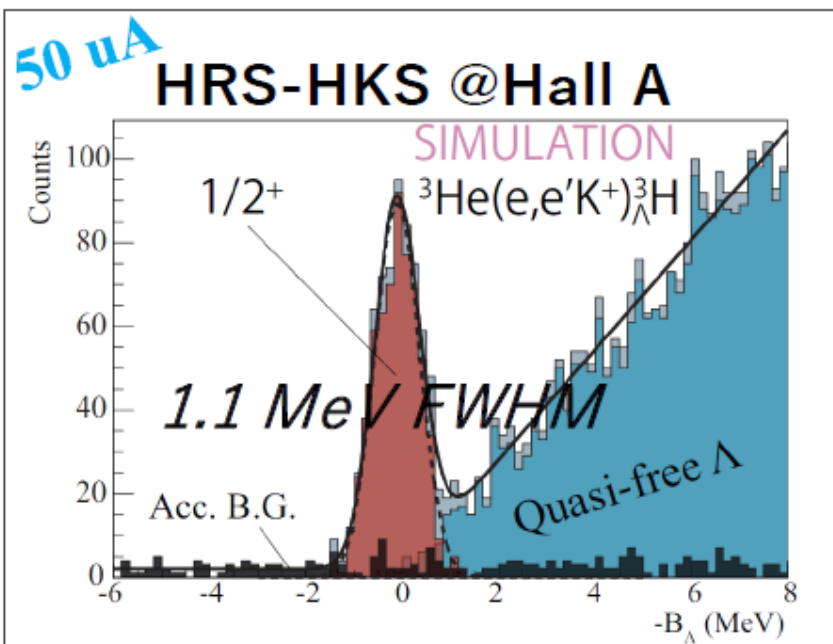
October 7, 2021

Signal to noise ratio in the case of Hall C

✓ HES-HKS; w/o e+e- background in HKS
✓ (HES rate = 2.5 MHz @8uA, ^{52}Cr →) HES rate @20uA →
  - 2.2 MHz (^{3}He, 190+162 mg/cm^2) → coin = 1.5 kHz
  - 3.6 MHz (^{40}Ca, 100 mg/cm^2) → coin = 1.3 kHz
  - 55.7 MHz (^{208}Pb, 100 mg/cm^2) → coin = **18.4** kHz

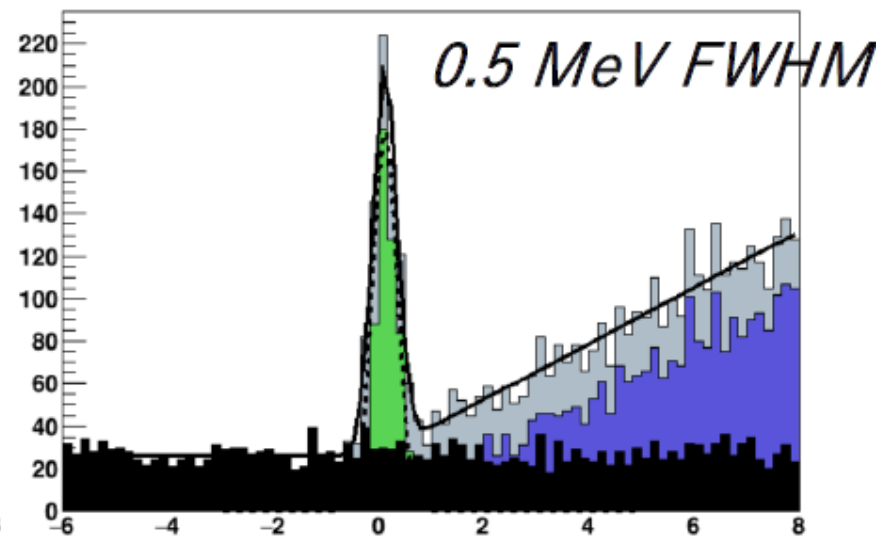One of solutions:
➢ 1/3 of beam intensity
➢ 3 times longer beamtime

50 uA

HRS-HKS @Hall A

SIMULATION

1/2+

^{3}He(e,e'K$^+$)$^3_\Lambda$H

1.1 MeV FWHM

Acc. B.G.

Quasi-free Λ

Counts

$-B_\Lambda$ (MeV)

Stat. err. = 20 keV

S/N: HES-HKS @Hall C, 20 uA

1.1 MeV FWHM

Stat. err. < 30 keV

0.5 MeV FWHM
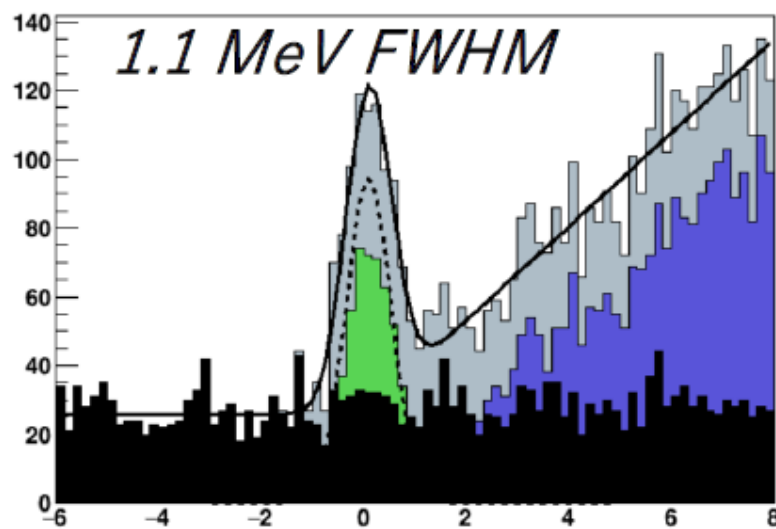
Stat. err. < 20 keV

- Collaboration meeting to share
  - Physics (particularly with collaborators who are not so familiar with hypernuclear physics)
  - Preparation Status (detectors, magnets)
  - Schedule
  - New results (nnL, A = 9 HN)
  →During the week of Dec 6 → What do you think?
- nnL cross section paper
  - some comments received
  - As Hall A Experiment ← Hall A CC is examining now