Minutes DRAGON Group Meeting 4 Sept 2007

Present DO (rec), DH LB L? CD CV

Hardware

TUDRAGON run

-MD1 developed a power supply problem, call in technician needed
-CCD unable to see the light of ion gauge on valve back
-FC1 had wrong cable connected, cable labeling not clear

TUDRAGON run

-22 Ne beam used as Boron had clogged up ion source
-achieved 95% transmission through gas cell
-leakage on strip detectors good with gas flowing and no beam
-leakage rose with 5 enA 4+ beam
-bias on suppressor with +/- polarity, leakage increased in either case
-IRIS shielding S2 open or closed, made no difference
-He gas substituted for H2, everything just as bad
-permanent magnets not tested
-fuzzy pumping tubes worked to a point, below 5T and above 7T usable

23Na Run preparations

-beam expected Fri pm through Tue
-ion chamber to be used
-DAQ is working
-Charge slits need alignment optically
-MCP not needed

Run plan instructions on next page

As a prelude to discussion of the preparations at today's meeting, here's a compilation of what I believe needs to be done.

1. Resonance characteristics

Ep=309 +/-1 keV (Gorres et al, ApJ 343 1989)
-> Ecm = 296 +/- 1 keV
wg = 107 +/- 22 meV (l=0+2)
Ex = 11.988 MeV (2+) (Hale et al, PRC 70 045802, 2004)
Branching Ratios Unknown (but nearby 2+ state decays mainly to 1st ex state at 1.4 MeV, then to states ~4-5 MeV)

2. Beam energy, Yield etc.

8 Torr, stopping power = 76.33 eV /[10**15 at/cm**2] = 45.57 MeV.cm**2/mg
-> Through 1/2 gas target loses 260 keV = 11.3 keV/u
Lab energy on resonance = 7.034 MeV = 306 keV/u
-> Beam energy to center resonance = 7.294 MeV = 317 keV/u
Yield = 4.83e-07 reac/ion ~ 3000/s @ 1pnA.

3. Preparations (and suggested participants)

a) install gas target and elastic monitors (DO + LE)
b) connect elastic monitors to supply and DAQ (CR + LE)
c) flush helium, switch to hydrogen (DO/DH)
d) align & calibrate charge slits (DO)
e) calibrate BGO array (LE + CR/CV)
f) install ion-chamber, change analyzer, get MCP up and running (CV)
g) check all BCMs, FCs, optics (CR/DH/CV)
h) BGO spectra up to 15 MeV (CR/CV)

Anything I missed?

Cheers,

Chris