

Status report after exp. FRS000 (29 Oct – 3 Nov 2010)

Expert team (03.11.2010)

Test of the ToF detector and RPC

Beam: $^{238}\text{U}^{73+}$ @1000 MeV/u , $i = 2 \cdot 10^9$ /spill , spill length 1-2 s, main user.

TA-Matter: SIS-window C 0.035 mg/cm² ,
Target Cu 90 mg/cm², TS2ET2 #48,
Target Be 1629 mg/cm² + Nb 223 mg/cm², TS2ET2: #26,
Effective thickness of Be: 1606 mg/cm².

S1-Matter: Al degrader: 2500 mg/cm² + empty pocket (TS3DD2)

S2-Matter: SC21 Sci BC400 0.97 mm thickness, 220x45mm², TS3ESA_S: 360 mm
Al disc degrader 731 mg/cm² (minimal thickness)

SC22 plastic scintillator 1 mm
TPC23 (TPC3), TPC24 (TPC4)

S4-Matter: Music41, TPC41 (TPC5), Cu stripper 100um, Music42, TPC42 (TPC6),
SCI40 (1mm), [RPC –only at the beginning], SCI41 (3.15 mm),
Al degrader, RISING Ge crystal ball, Passive stopper, (LYCCA).

Some problems with moving in the S1 stripper pocket (many tries needed), TA drive (TS2ET2) got stacked in an intermediate position (29.9/-248.9), however, later possible to adjust.

Beam aligned at the target with CG01/CG02, all other focal planes using MWPC/TPC.

Detector	HV setting
CG01	70 V
CG02	70 V
CG11	70 V
CG21	70 V

Detector	HV setting
MW11A	2200 V
MW21A	2200 V
MW22A	2200 V
MW31A	2000 V

All MWPC have worked fine, no MW22A and MW31YD signals (S392 logbook p.129).

Detector	HV setting(V)
SC01	1800 V (5 mm)
SC21L	1900 V (0.97 mm)
SC21R	1900 V (0.97 mm)
SC22L	950 V
SC22R	1000 V
SC40L	1000 V
SC40R	1000 V
SC41L	1100 V
SC41R	1170 V
TPC23 (TPC3)	A: 630 V, D: 2400 V, SC: 600 V
TPC24 (TPC4)	A: 630 V, D: 2930 V, SC: 700 V
TPC41 (TPC5)	A: 600 V, D: 2400 V, SC: 480 V
TPC42 (TPC6)	A: 600 V, D: 2400 V, SC: 350 V
MUSIC41	C: 8000 V
MUSIC42	C: 8000 V

Sci21L, sci21R, sci41L, sci41R CFD threshold set to -150 mV (brand new Ortec 935).
Additional ToF measurement (Sc22-40), cables directly from S2 to S4 (S2 #17, #19).

Optics based on theory: [RUN81_TA2B.DAT](#) with adjusted last triplet. Focal point at S4 set to 2500 mm.

Several FRS settings have been used optimized for the production of the following isotopes: ^{205}Pb , ^{202}Os , ^{194}Os , ^{226}At , ^{222}At . Passive stopper (8 mm plastic) used for ^{205}Pb isomer tagging setting.

SEETRAM calibration performed at the beginning and end of the run.

Directories used in the run:

Go4: /u/profi/Go4/s392/online

Data: /d/rising03/s392_oct10/

DAQ: /lynx/Lynx/frs/usr/prespec/mbsrun/oct_2010 (tar ball exist of frozen version in the tape robot name oct2010-s369.gz, data directory), prespec DAQ.

TapeRobot backup : in /data and /calib of /risingraw /s392_oct_2010

