

12

3/2/11

60 Hz

40.5 MeV

Neutron Det Thresh 200mV

8:00am

Last night shielded both sides of concrete wall around beam line with $\sim 6'' - 8''$ lead. Collimated pretty well.

8:20am

- beam on
- radiator out
- tuning to get small beam
- Energy: ~ 41 MeV (little under)

8:55am

Dump Magnet in
Radiator out
No physics target
Central holes block
Photon collimator open
kicker magnet off

Timed Run to check background

Radiator Out:

1 minute: POLINA: 2503

Radiator In

1 min: POLINA: 3096

Reduced current $\sim 25\%$.

1 min counts:

Rad in: POLINA: 1293

RINA: 2596

Rad out: POLINA: 1422

RINA: 2755

9:08am

- physics target in: D₂O
- Radiator In
- Dump magnet in

Radiator out

POLINA: 1597

RINA: 2977

1 minute count

POLINA 1752

RINA 3118

* Beam dump maybe causing background.

D2O In → Dump Magnet In →

Rad out

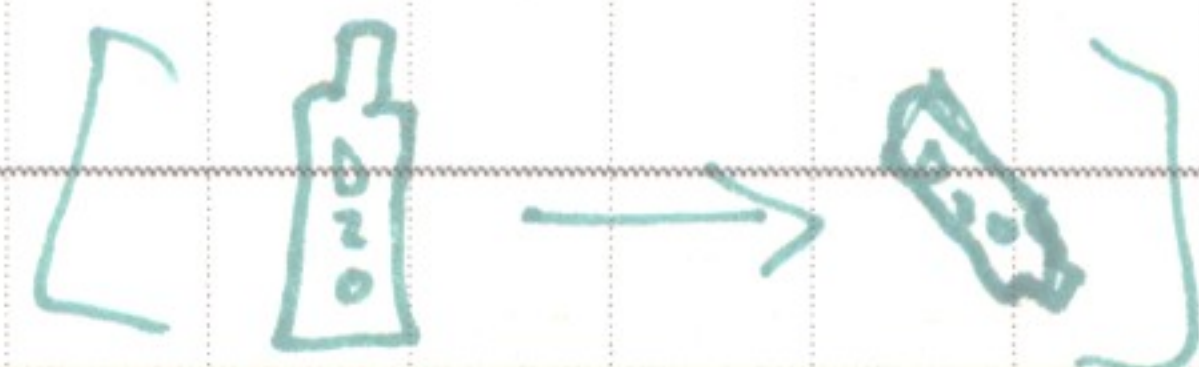
PolINA: 1532
LAINA: 2852

~~Rad In~~

~~PolINA:
LAINA:~~

9:17am

moving D2O target to allow for more area to be hit just in case alignment is off.



Radiator Out:

PolINA: 1723
LAINA: 3082

Radiator In

PolINA: 1575 | 1480
LAINA: 2915 | 2818

9:25am

- D2O target in
put beam harden on accelerator side

4" Aluminum.

Radiator In (1 min counts)

PolINA 1590
LAINA 2941

Radiator Out

PolINA 1480
LAINA 2872

9:40am

- D2O Target in
Removed graphite + poly from beam dump magnet area

Radiator Out

PolINA 1723
LAINA 3119

Radiator In

PolINA: 1625
LAINA: 2981

9:55am

- D2O Target in
Restacked graphite + poly. Added 2" lead behind Graphite.

Radiator In

PolINA 340
LAINA 418

Radiator Out

PolINA 306
LAINA 304

10:05am

moved Al beam harden from accelerator side to experimental side.
4" Al downstream of downstream collimator.

Radiator Out (1 min count)

PolINA: 400
LAINA: 418

Radiator In

PolINA: 343
LAINA: 391

10:10am

pulling D₂O target out

<u>Radiator In</u>	(1 minute ct)	<u>Radiator Out</u>
POLINA		POLINA: 278
POLINA: 326		AINA: 349
AINA: 402		

10:15am

Increased Rep Rate to 150 Hz

Radiator out

No target - 1 minute counts:

POLINA: 534	611
AINA: 570	598

Radiator In

POLINA	522	454
AINA	568	503

10:25 Adjusting Neutron Det thresh

No Target (1 minute counts)

POLINA: -200mV ~ above data

-400mV	<u>Radiator In</u>	<u>Radiator Out</u>	$\frac{138-400}{125}$
	138	125	125

-600mV	<u>Radiator In</u>	<u>Radiator Out</u>
	130	111

-800mV	<u>Radiator In</u>	<u>Radiator Out</u>	221
	106	87	

-1V	<u>Radiator In</u>	<u>Radiator Out</u>
	53	59

10

10:40am No beam, testing cosmic on neutron detector POLINA

thresh @ -1V

1 minute count: 42

-600mV 45 counts/minute.

-400mV 66 counts/minute.

10:50am

D₂O target in
 Polina Thresh @ -400mV

Radiator In \approx 900 counts/minute.

Radiator Out \approx

Radiator In: 410 counts/min.

Radiator Out: 501 counts/min

-600mV

Radiator In: 260 counts/min

Radiator Out: 285 counts/minute.

-800mV

Radiator In: 171 counts/min

Gate Valve closed: 34 cts/min

Radiator Out: 158 counts/min

-1V

Radiator In: 119 counts/min

Radiator Out: 125 counts/min

Gate Valve closed: 40 counts/min

11:30am

Stacked lead around upstream flange of 6" vacuum pipe just downstream of the sweep magnet. D₂O target in.

- Radiator in, gate valve open.

Polina @ -600mV Thresh.

- 101 counts/min.

Radiator Out: 78 counts/min

11:45am

- Covered the last flanges with lead (at end of 6" vacuum pipe)

- Moved 4" beam hardener from experimental hall to the end of vacuum pipe again.

Polina @ -600mV thresh. D₂O in

Radiator out: 76 counts/min

Radiator in: 86 counts/min

16

11:58 am - increased current (doubled it)

converter in

beam on

target in (-600mV)

136 counts/min

Radiator out: 114 cts/min

-800mV

Radiator Out = 96 cts/min

Radiator In = 74 cts/min

12:10pm Polina - 600mV Thresh. Radiator In try 5 min run.
529 counts / 5 min.Radiator Out
504

12:22pm

Radiator Out -D₂O in

* Kicker magnet bending down (75A)

Polina @ -600mV Thresh.

498 counts / 5 minutes.

12:32pm * Kicker magnet down again

Radiator In

492 counts / 5 minutes.

r

12:37pm Kicker magnet bending down w/ 50 Amps

Radiator In: ~~474~~ ⁴⁷⁴ cts / 5min

Rad out: 495 cts / 5mins

1:20pm 20min Run - 50 Amps down

Rad out: 1754 / 20 minutesRad in: 1880 counts / 20 minutes

15:00

17

TDC working

TDC Channel

12

13

14

15

Detector

Sofia

Natali

IRINA

Polina

- D₂O Target In
- Radiator In (1mil Al)

Run # 1795

2102k events.

* First Time of Flight Attempt *

see saved spectrum pictures

ToF 1795.png

3:45pm

- Switched D₂O for H₂O (H₂O target in)

- Radiator In, Sweep magnet in, 4" Al beam hardener in Acc hall

Run # 1796

-> 246k events

ToF - Run 1796.png

4:23pm

Run 1797

- Took out H₂O target

- Put in 1/4" lead sheet target [5cm x 5cm x 1cm]

4:50pm Radiator Out

Run # 1798