Spin Dance 2000 - FINAL RUN PLAN

July 7, 2000 (j. grames)

Program Coordination

The program runs from 00h Monday, July 10 through 24h Tuesday, July 11 (6 shifts).

The program order is:

1. Injector and acclerator setup
2. Polarimeter checkout
3. Injector energy measurement
4. Spin dance
5. Unpolarized beam delivery
6. Hall A arc energy measurement

Run Coordinator (RC) for the spin dance is Joe Grames (cell: **377-1071**). Decisions regarding the spin dance will be made by the contacts of the polarimeter and accelerator groups, however, to ease the flow of information between the Progam Depty, Operations, and the Polarimeter Groups all changes, etc. go through the RC.

Baseline Equipment	*Contact*
Injector/Polarized Source	Charlie Sinclair
Injector Mott	Michael Steigerwald
Hall A Compton	Joe Mitchell
Hall A Moller	Eugene Chudakov
Hall B Moller	
Hall C Moller	Beni Zihlmann
Injector Energy	Reza Kazimi
Hall A Arc Energy	Douglas Higinbotham
Accelerator	Michael Tiefenback

.

Useful phone numbers are:

MCC Crew Chief: x7097
MCC Injector Console: x5020
Hall A: x6328/x6349
Hall B: x5247
Hall C: x6000/x6666

SPIN DANCE OVERVIEW

The order of the spin dance and polarimeters receiving beam for each point are listed here:

#	*Wien (deg)*	*Mott (laser=dc)*	*Compton (laser=rf)*	*Moller A (laser= rf)*	*Moller A (laser=dc)*	*Moller B (laser=dc)*	*Moller C (laser=dc)*
A	-20	X	X	X	X	X	X
B	0	X	X	X	X	X	X
C	+75	X	X	X	X	X	X
D	+90	X	X	X	X	X	X
E	+105	X			X	X	X
F	+55				X	X	X
G	+40				X	X	X
H	+20	X			X	X	X
I	-39	X			X	X	X
J	-61	X			X	X	X
K	-83	X			X	X	X
L	-105	X			X	X	X

NOTE: If a two way split (two bunches to A and one bunch to C) is possible then the Hall C Moller can receive beam during both the Compton and Moller A laser=rf periods.

Plots of the expected polarization curves are attached.

REPORTING

In addition to usual record keeping for each group please make a logbook entry to ELOG posting a preliminary result following each Wien setpoint:

Item	*e.g.*
Polarimeter Type	Compton
Wien Angle Label	J
Beam Mode	laser=rf
Beam Current	77 uA
Preliminary Polarization w/ Uncertainty	78.6 +- 2.1
Comments	low background

Detailed Run Plan

7/10 - OWL

7/10: 00:00 Wien=-10 Injector Setup (30 minutes)

Ops passdown
Set Wien
Steer injector

7/10: 00:30 Configuration (2.5 hours)

Ops Configure 5th pass to BSY
Setup A w/ laser=rf
Setup ABC extraction w/ laser=dc

7/10: 03:00 Polarimeter Checkout I (2.5 hours)

Beam to ABC w/ laser=dc

Hall A Moller (-75%)
120 min @ 0.1, 0.5, 1, 2 uA current scan

Hall B Moller (+41%)
40 min @ 2nA for PMT response
60 min @ 1, 2, 3, 4, 5, ... nA for accidentals study
120 min @ max current for target systematics

Hall C Moller (+32%)
Setup
Electronics Checkout (1.5 h)
Start Quad Scans (1h)

7/10: 05:30 Polarimeter Checkout II w/ Wien=-65 (3 hours)

Set Wien=-65
Steer Injector
Beam to ABC w/ laser=dc

Hall A Compton (-41%)
Setup beam through chicane (max 4 hours)

Hall B Moller (+75%)
Remainder of tests from previous section

Hall C Moller (-37%)
Collimator Setup (1 h)
Asymmetry Studies (1 h)
Position Sensitivity Studies (1 h)

7-10 - DAY

7/10: 08:30 Polarimeter Checkout III w/Wien=+55 (3.5 hours)

Set Wien=+55
Beam to ABC w/ laser=dc
Steer injector

Hall A Compton (-34%)
Setup beam through chicane (max 4 hours)

Hall B Moller (-39%)
No beam or more testing?

Hall C Moller (+75%)
Current Scan (1.5 h)
Config A extraction
Beam to A w/ laser=rf
Compton checkout w/ high current

7/10: 12:00 Injector Energy Measurement (1 hour)
R. Kazimi will perform injector energy measurement.
Final checkout prior to spin dance.

7/10: 13:00 Wien=-20 (4.5 hours)
Set Wien
Steer injector
Beam to A w/ laser=rf
Compton
Moller-A
Config ABC extraction
Beam to ABC w/ laser=dc
Moller-ABC
Config Mott extraction
Beam to Mott w/laser=dc

7-10 - SWING

7/10: 17:30 Wien=0 (4.25 hours)
Set Wien
Steer injector
Beam to Mott w/ laser=dc
Mott
Beam to ABC w/ laser=dc
Moller-ABC
Config A extraction
Beam to A w/ laser=rf
Compton
Moller

7/10: 21:45 Wien=+75 (4.25 hours)
Set Wien
Steer injector
Beam to A w/ laser=rf
Compton
Moller
Config ABC extraction
Beam to ABC w/ laser=dc
Moller-ABC
Config Mott extraction
Beam to Mott w/ laser=dc

Mott

7/11 - OWL

7/11: 02:00 Wien=+90 (4.25 hours)

Set Wien
Steer injector
Beam to Mott w/ laser=dc
Mott
Beam to ABC w/ laser=dc
Moller-ABC
Config A extraction
Beam to A w/ laser=rf
Compton
Moller

7/11: 06:15 Wien=+105 (2.25 hours)

Set Wien
Steer injector
Config Mott extraction
Beam to Mott w/ laser=dc
Mott
Config ABC extraction
Beam to ABC w/ laser=dc
Moller-ABC

TUESDAY DAY

7/11: 08:30 Wien=+55 (1.5 hours)

Set Wien
Steer injector
Beam to ABC w/ laser=dc
Moller-ABC

7/11: 10:00 Wien=+40 (1.5 hours)

Set Wien
Steer injector
Beam to ABC w/ laser=dc
Moller-ABC

7/11: 11:30 Wien=+20 (2 hours)

Set Wien
Steer Injector
Beam to ABC
Config Mott extraction
Beam to Mott w/ laser=dc
Mott

7/11: 13:30 Wien=-39 (2.5 hours)

Set Wien
Steer injector
Beam to Mott w/ laser=dc
Mott
Config ABC extraction
Beam to ABC w/ laser=dc
Moller-ABC

7/11 - SWING

7/11: 16:00 Wien=-61 (2.25 hours)

Set Wien
Steer injector
Beam to ABC w/ laser=dc
Moller-ABC
Config Mott extraction
Beam to Mott w/ laser=dc
Mott

7/11: 18:15 Wien=-83 (2.25 hours)

Set Wien
Steer injector
Beam to Mott w/ laser=dc
Mott
Beam to ABC w/ laser=dc
Moller-ABC

7/11: 20:30 Wien=-105 (2 hours)

Set Wien
Steer injector
Beam to ABC w/ laser=dc
Moller-ABC
Config Mott extraction
Beam to Mott w/ laser=dc
Mott

7/11: 22:30 Unpolarized Beam Measurement (0.5 hours)

The depolarizing optic will be installed by automated actuator. A check of the injector beam orbit will be required and then delivery to Halls can commence.

Mott measurement of unpolarized beam will occur last during which time the Hall A arc energy measurement preparations will begin, e.g., arc to be set in dispersive mode and not through Compton chicane.

7/11: 23:00 Hall A Arc Energy Measurement (2 hours)

D. Higinbotham will perform the measurement from the MCC and will require the following:

•Hall A arc dispersive mode
•Not through Compton chicane
•Energy Lock in Hall C
•Orbit Lock on Hall A
•5 uA CW beam

7/12: 24:00 Program Ends

Expected Polarization Curves