BCM and MÖLLER POLARIMETER COMMISSIONING PLAN

O. Glamazdin

NSC Kharkov Institute of Physics and Technology, Kharkov, Ukraine

BCM COMMISSIONING

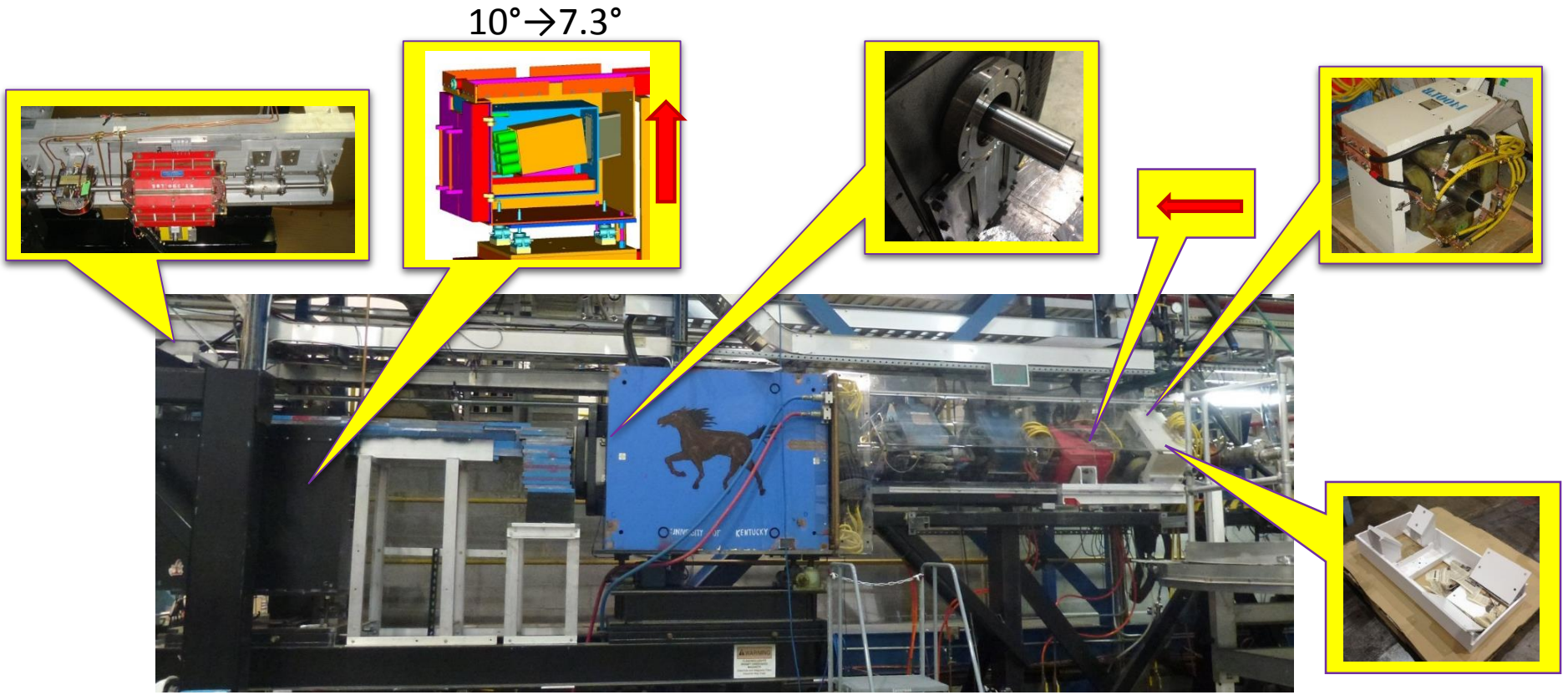
Kharkov group is responsible for the Hall A beam charge measurements: UNSER & BCMs

No any upgrade for BCMs and Unser

Spring commissioning run:

- **To check status;**
- **To get experience;**
- **To collect problems;**
- **…**

MÖLLER POLARIMETER UPGRADE



- 1st quad shifted downstream
- New 4th quad added
- New girder for quads #1 and #4

- Shielding pipe in dipole
- New detector shield box
- Reconfigured girder:
  v. corrector + quad + BCM

SPRING COMMISSIONING RUN

To complete the Möller polarimeter commissioning
1GeV, 11GeV and an intermediate beam energy are needed.

Spring run:
- **Unknown beam condition;**
- **Unknown time for commissioning.**

The Möller commissioning plan consists of three parts.
Part I: includes what exactly has to be done in the commissioning time.
The Part I has to show readiness of the polarimeter for operation after upgrade.
The Part I includes a few tests which can not be done with another Halls running.

Part II: includes measurements for the Hall A polarimeter systematic studies.
Those measurements could be done later in period of the Hall A experiments running.

Part III: includes specific test of the beat frequency mode and ideas we don't know yet.

Not all of the tests can be done at any beam condition.

PART I

1. Möller settings / Beam tuning
2. Detector HV tuning

#1 has to be done before each shift
#2 has to be done once in the beginning of the first commissioning shift
(if the beam energy will be the same for all commissioning runs).

PART I

Part I: includes what exactly has to be done in the commissioning time.
The Part I has to show readiness of the polarimeter for operation after upgrade.
The Part I includes a few tests which can not be done with another Halls running.

1. Shielding pipe test: beam position on BPMs downstream of the Möller polarimeter for different dipole fields
2. All four Möller quads scan
3. Beam polarization measusement with different targets (all four targets)
4. Beam polarization vs. helicity frequency (30, 300Hz, 1kHz)
5. IHWP IN vs. OUT + PHWP IN vs. OUT
6. Pre-buncher dependence measurement

Totally: 3 - 4shifts

PART II

Part II: includes measurements for the Hall A polarimeter systematic studies.
Those measurements could be done later in period of the Hall A experiments running.

1. Dead time measurement
2. Dead time in USER mode (no target heating)
3. Raster dependence
4. Beam polar. meas. with different detector configuration (an.pow. & Levchuk)
5. Beam polar. meas. with different dipole settings (an.pow. & Levchuk)
6. Beam polarization vs. Dipole collimator
7. Injector laser phase dependence

Totally: 4 – 5shifts

PART III

Part III: includes specific test of the beat frequency mode and ideas we don't know yet

1. Beat frequency mode
2. Special FADC tests ???
3. Others ???

Totally: 1 shift

Part I. - 3-4 shifts
Part II. - 4-5 shifts
Part III. - 1 shift

Totally: 8 - 10 shifts

CONCLUSION

Hall A Möller polarimeter is ready for commissioning

GIVE US the BEAM and TIME -

We will do the rest!

MERRY CHRISTMAS!