

# Weekly report

## October 5 - October 12

### W 40-41

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Narodowe Centrum Badań Jądrowych  
National Centre for Nuclear Research  
ŚWIERK

JRC collaboration partner

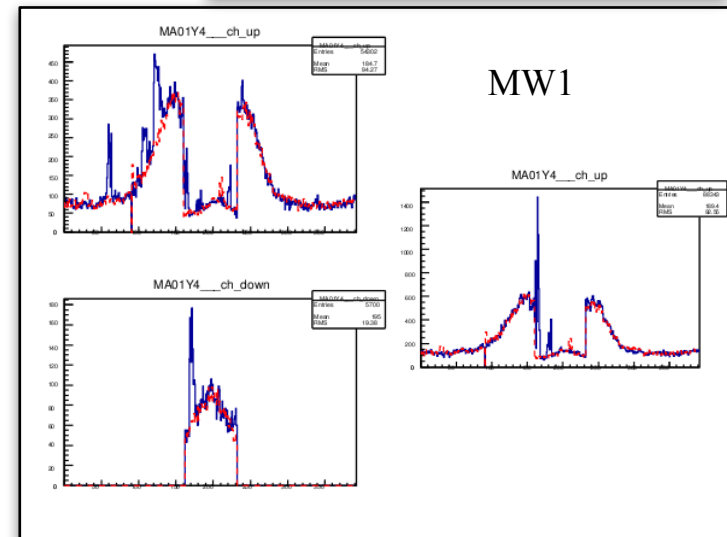
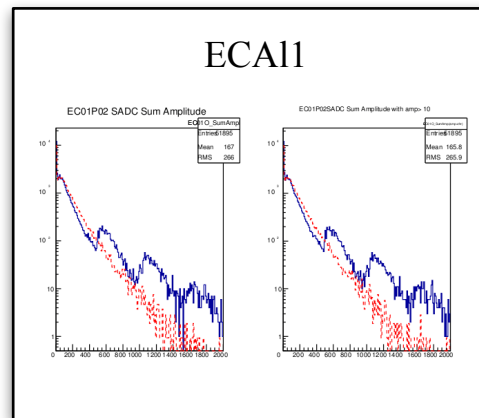
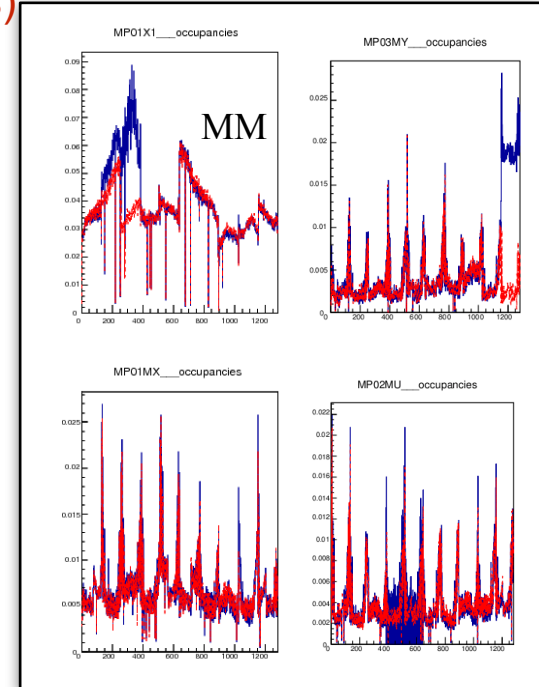
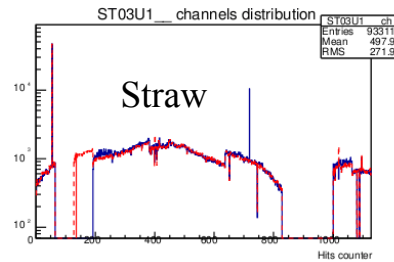
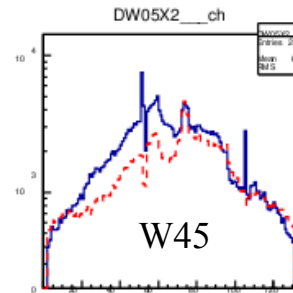
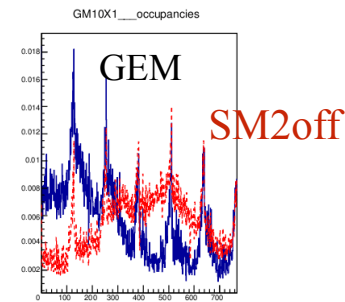
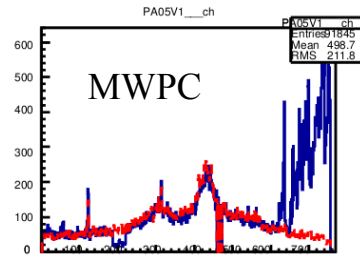
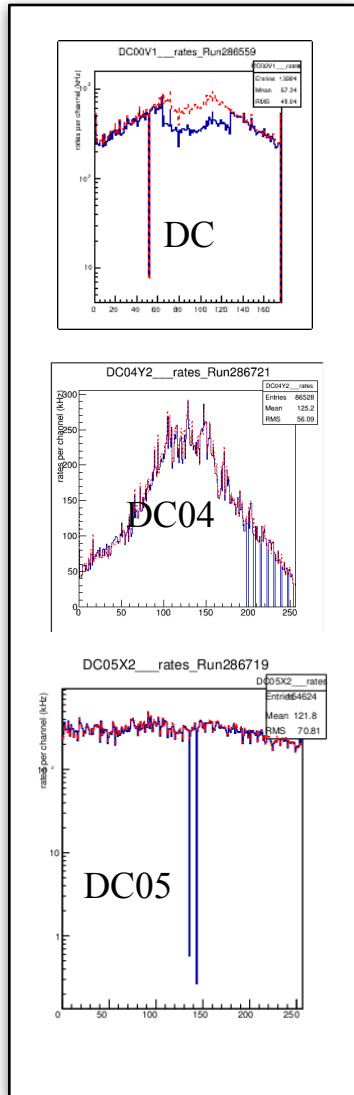
DY pion Physics: ~ 9000 good spills taken  
DY pion Physics with SM2off: ~5900 spills taken  
DY pion Physics with SM2off low int.: 900 spills taken

CEDAR study was performed, pressure scans  
Trigger efficiency study (tax2@50 mm)

## Problems:

1. SM2 trip Saturday - it costs 3 day to repair  
( the thyristor bridge)
2. DC05 LV problem (Mean-Well module)  
DC05 LV channels to the new power supply at Tuesday
3. The magnet slow dump happended during the field rotation Wednesday.  
and the polarization was lost
4. Unstable beam, changed spills and SC, filling LHC, low intensity,  
LINAC down and kicker pproblem, PS problem, BETS problem etc.

## Detector problems (Noisy detectors, missing channels)



DY  $\pi$  :  $\sim 3220$  good spills taken

pion beam

SC 22,42s, 1 spill

T6 intensity 118-124\*  $10^{11}$

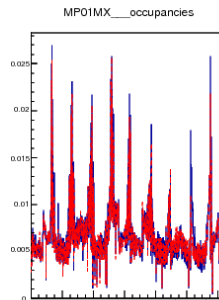
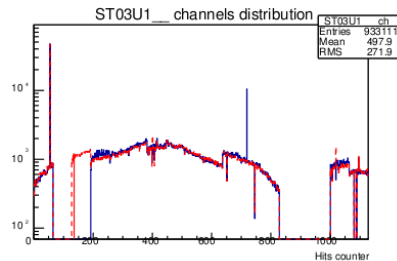
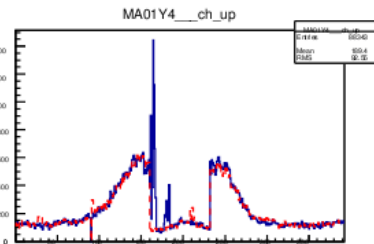
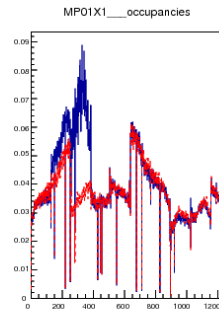
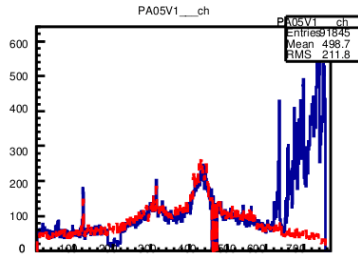
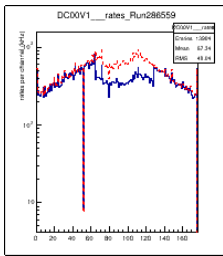
symmetry 92-95%

from 2pm:

errors on detectors: DC, scrId. 258, Straw, MWPC, MW1, MM  
DC05 LV (morning, 5 planes missing, access to replace LV PS)

Saturday night  $\sim 2$  am  
PMM2, srcID 381, Power-cycle of the LV,  
Power-cycle of pccofe15  
several times loaded

Saturday morning  $\sim 1.40$  pm:  
DC05 LV problem (Mean-Well module)  
2 planes missing (V', Y') now,  
SM2 trip, restored MCB  
errors, restored, put on and  
trip again after 20 minutes.  
CCC called, piquet was sent,  
then more serious problem.



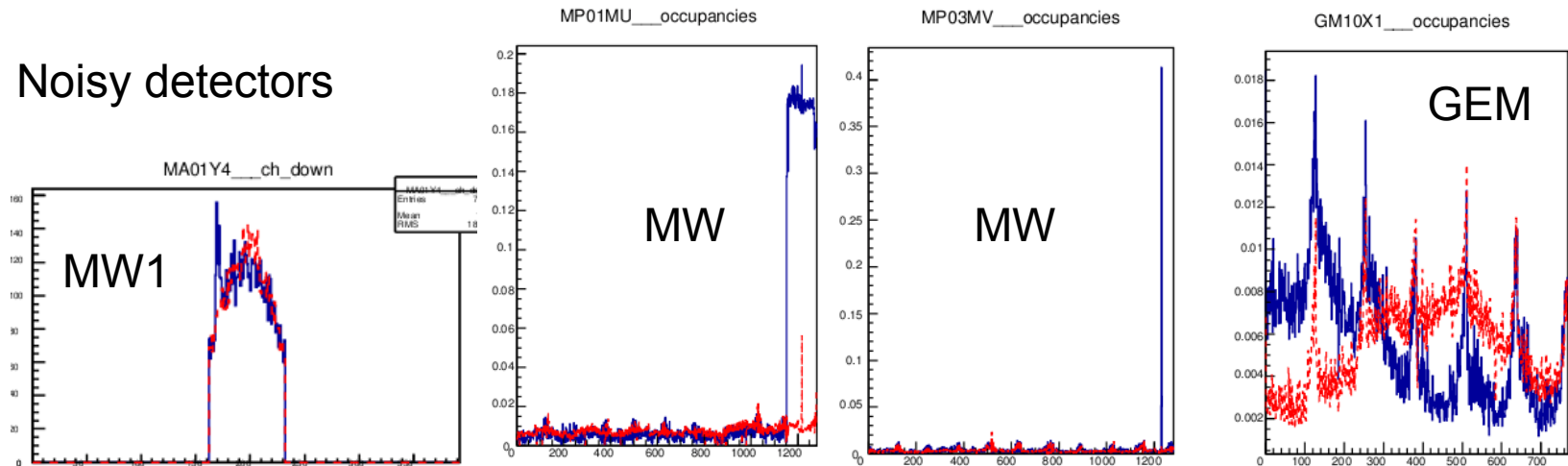
DY  $\pi$  - sm2off/DC5V'Y'/LASLAST :  $\sim 2230$  spills taken

SC 37.2 s, 1 spills  
T6 intensity  $119 \cdot 10^{11}$   
symmetry 94%  
21:11 change of beam  
SC 28.8, 2 spills  
T6 intensity  $127.5 \cdot 10^{11}$   
symmetry 93%

Sunday morning: access to field rotation,  
PT in longitudinal mode to improve polarisation  
trigger problem - EOS spill signal missing, missing,  
switch between SPs and ART was faulty, fixed by Moritz  
2.20 pm : CEDARs studies at low intensity  
 $2.8 \cdot 10^7$  (T6=40mm) and special collimator setting,  
special trigger with BT (for CEDARs), CT , LASLAST for DY

SM2 OFF and will be repaired on Monday, DC05 V' Y' LV disconnected and marked, GEM ON  
Special Trigger Mixing (LASLAST and CT which are affected by SM2 OFF)

## Noisy detectors



pion beam

SC 28.8s, 2 spill

T6 intensity  $123 \cdot 10^{11}$

symmetry 96%

Ion chamber 2:  $2.79 \cdot 10^7$

DAQ dead time: 6.4%

Veto dead time MT: 1.4%

Veto dead time OT: 1.3%

Veto dead time Random: 0.9%

CEDAR scan (low intensity  $2.8 \cdot 10^7$  (T6=40mm)): ~ 1750 spills taken, then CEDAR pressure scan.

DY  $\pi$  - SM2off/LASLAST : ~ 2460 spills taken

No beam since 7 pm till 9.40 pm  
(LINAC down and kicker issues)

Access for DC05

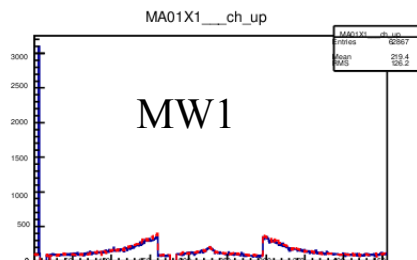
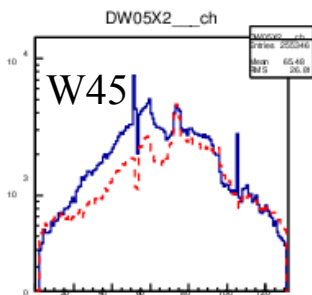
end of access 22:30, LV back on the 2 DC05 planes

pressure scan for CEDAR (low intensity)

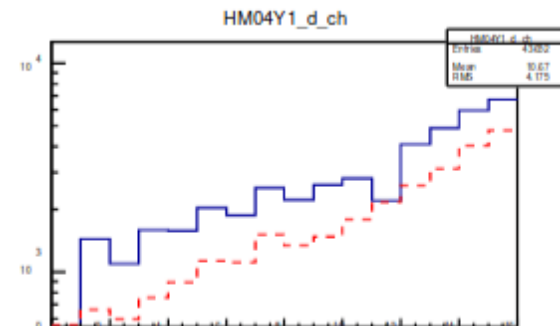
around midnight back to normal intensity data taking

Noisy detectors

loaded: PMM(srcID 381), DC (srcID 258), srID 432



Missing channel #0 in HMo4Y1\_d recovered by reloading discriminator thresholds (last 24 h)



SM2:

It is planned to exchange the thyristor bridge, 1 working day, probably till tomorrow  
low intensity runs since 12, no beam - 30 minutes

SC 28.8 s 2 spills - 37.2s, 1 spill

T6 intensity 117.8 E11

symmetry 94-97 %

Ion chamber 2: 1.55 - 3.3+E07

DAQ dead time: 5.3%

Veto dead time MT: 0.722%

Veto dead time OT: 0.616%

Veto dead time Random: 0.388%

DY  $\pi$  - SM2off/LASLAST : ~ 600 spills taken **SM2 off**  
 DY  $\pi$  - SM2off/LASLAST low int.: ~ 400 spills taken  
 DY  $\pi$  - SM2off/LASLAST/DC05 off : ~ 700 spills taken  
 DY  $\pi$  - SM2off/LASLAST/DC05 off low.int : ~ 500 spills taken

### evening:

2h no beam (BETS problem), threshold scan for CEDARs

9.20 pm beam back in the experiment to check CEDARs with low intensity

### night:

~2 am CEDAR 1 pressure changed 10.34 bars.

CEDAR\_Hv\_1\_Ch008 gave HvAlarm several times

~3 am many errors in DCS due to the power breaker, that switched OFF all the equipment in the rack.

~4-5.30 am access: restarted everything but DC05 last working mean-well LVPS which seems to be broken. The absence of communication with DC01/PMM CAEN HV crate was noticed. It was power-cycled and the communication was restored

~ 7 am : DAQ got stuck - cleanDAQ helped

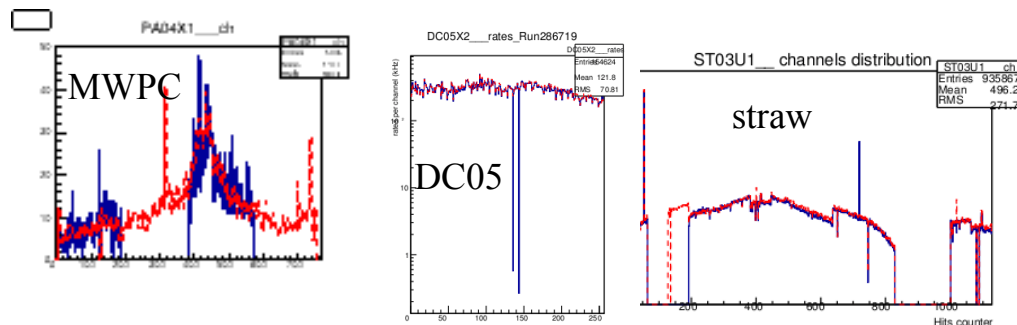
**today:** no DC05, ~11.30 am **SPS reduced intensity of the beam,**

~ 3 pm access: DC05 is now working, SM2 on, test performed

SC 37.2s, 1 spills  
T6 intensity  $119 \cdot 10^{11}$   
symmetry 91%

Ion chamber 2:  $3.65 \cdot 10^8$   
DAQ dead time: 13.6%  
Veto dead time MT: 23.1%  
Veto dead time OT: 20.6%  
Veto dead time Random: 14.8%

DY  $\pi$  :  $\sim 2550$  good spills taken



SM2 on, DC05 LV channels to the new power supply, Trigger DY

port 5 srcD 453 disconnected  
7 srcID 453 not working

pccoef13 reloaded  
pccoef08 reloaded

**afternoon & night: ~smooth data taking**

2 parts of MWPC4x1 are missing ID453 ports 5 and 7  
1 part of DC04Y2 missing ID260 port 4

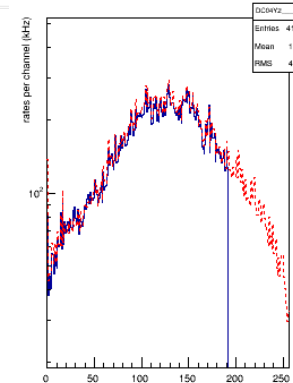
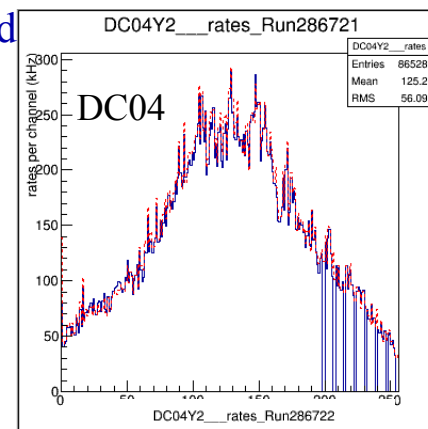
**Today MD:**

access with key, SM1&2 off, HV off  
work on MWPC, RW,

Due to intervention on Ar line, HV were switched OFF  
for detectors using flammable gases.

DAQ - The SLINK-Multiplexer SrcId 1007 is removed from DAQ.(Straw)

The magnet slow dump happened during the field rotation 8h46.  
The polarization was lost  
DNP restarted with the same configuration of the polarization.





DY  $\pi$  :  $\sim$  1570 good spills taken

**evening:** CEDAR threshold scan was performed ,  
beam on with low intensity for CEDAR diaphragm alignment.  
Trigger efficiency data tax @50mm

**night:**

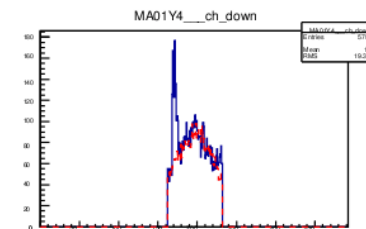
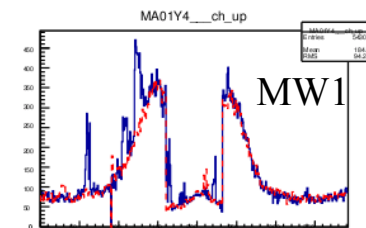
SC 28.8s, 2spills  
T6 intensity 122.7  
Ion chamber 2: 2.64e+6  
DAQ dead time: 13.766%  
Veto dead time MT: 21.37%  
Veto dead time OT: 19.386%  
Veto dead time Random: 14.37%

1 am: The Drell-Yan data taking was resumed.  
Upstream-Cell polarisation  $\rightarrow$  -58.5%  
Downstream-Cell polarisation  $\rightarrow$  68.3%

**Today morning:**

low intensity beam with solenoid field  
9.30 repolarization of the target starting now  
data taking for CEDAR studies  
Trigger test (efficiency) with very low intensity  
**3 h no beam off from PS,**

Straw: HV trips  
ECAL2: LED monitoring alarm



DY  $\pi$  :  $\sim$  1650 good spills taken

**evening:** beam unstable till  $\sim$ 8 pm,  
trigger test runs, then CEDAR pressure scan,  
 $\sim$  11.30 back to normal data taking  
**night:** LHC filling, 1 or 2 spills  
pion beam

SC 32.4s, 2 spills

T6 intensity 117.7

symmetry 96%

Ion chamber 3.41E8

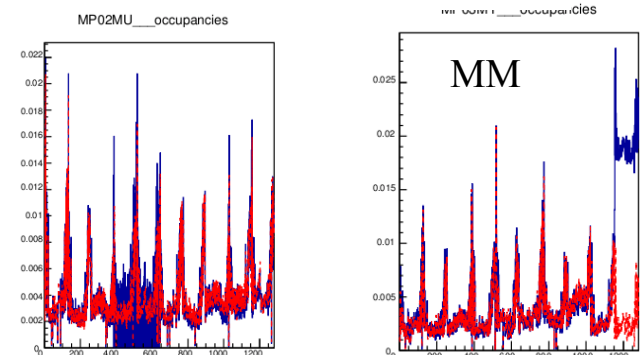
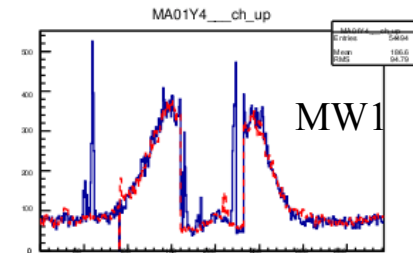
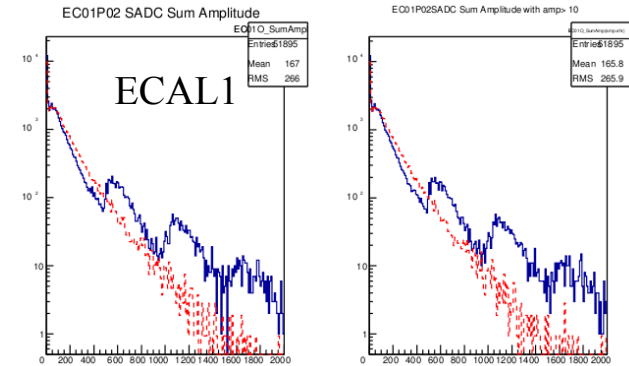
DAQ dead time: 13.6%

Veto dead time MT: 21.1%

Veto dead time OT: 18.7%

Veto dead time Random: 14.0%

**today morning:**  
alignment





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Thanks to all shifters and experts