

Period coordinator report

August 13th – August 20th

For people who believe on:

“For a period starting on Friday 13th not so bad, but Finale Furioso”

Beam

mostly smooth, but also several periods with “beam off ” and instabilities

Experiment

in a good and stable shape

only a few problems, partly caused by beam instabilities

Data

of first transversity period should be of good quality

Goal: 15000 good spills

Taken: ~15913 good spills (including ~ 2362 with „detector flags”)

Second transversity period: restart caused by water problems

Target polarisation

Transverse mode

1. Period: spin direction in upstream cell: ↑

Start values on 13th: + 50.70% and - 43.52%

Stop values on 18th: + 47.28% and - 41.48%

Relaxation
a little
asymmetric
(is normal)

2. Period: spin direction in upstream cell: ↓

Start values on 19th at 20:00 (21:00): - 44.8% and + 46.0%

Date taking started on 19th at 21:30

starting point (assuming 100 hrs runtime):

gain in polarisation ΔP compensated by loss of run time Δt

merit: $\sim P^2 \times N \rightarrow 2 \times \Delta P \leftrightarrow \Delta t$

unfortunately only 2 hrs runtime

due to water problems → polarisation lost at 20th, 1 a. m.

restart at 4 a. m., Values at 2 p. m. -30.0% and 32.6%

Length of time excluding scheduled MD: 111.00 hours

**** Efficiency of PS/SPS

- a: Total SPS Circle (exclude scheduled MD): 23458.0
- b: SPS spill with T6 current >30.0: 18521
- c: Sum of T6 current 2267911.7
- d: (=b/a) PS/SPS Efficiency: 79.0%

**** Muon Beam In HALL 888

- f: SPS spill In Hall with Muon Count >100000.0: 18349
- g: Sum of In Hall Muon Count: 3442223927160.0
- h: (=f/b) SPS Spill Get in 888: 99.1%

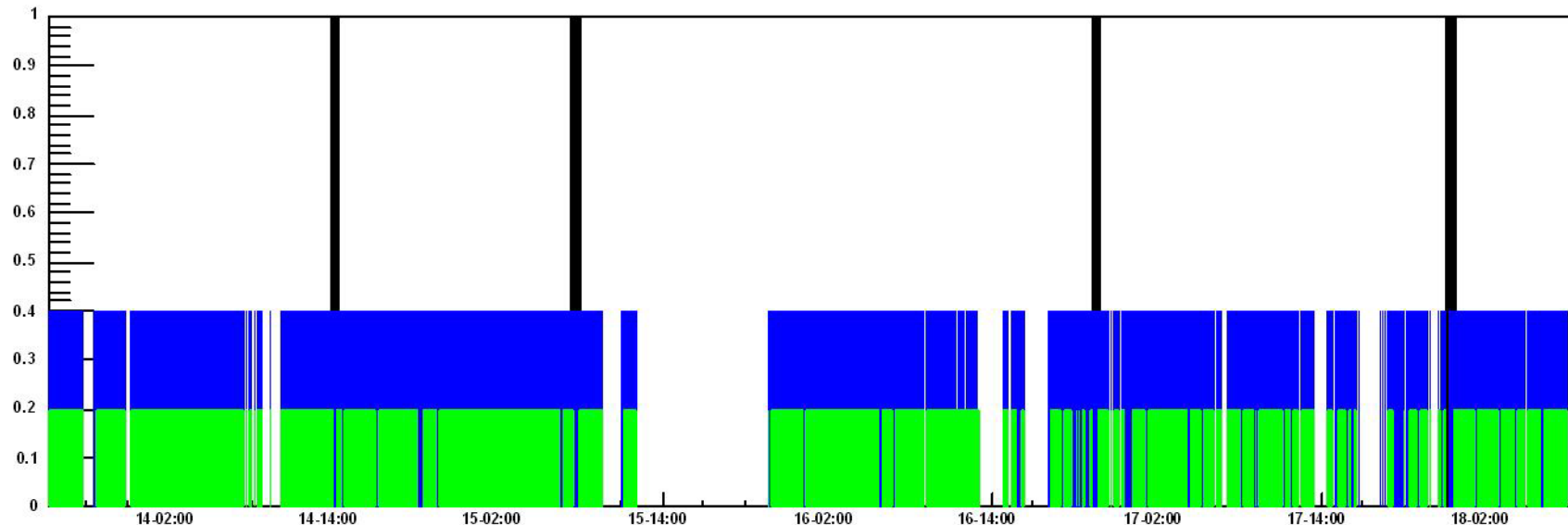
**** Use of SPS/Inhall Spill in COMPASS

- i: Spill used with ion chamber counting >100.0: 16131
- j: (=i/f) Inhall spill used: 87.9%
- k: (=i/b) SPS spill used: 87.1%

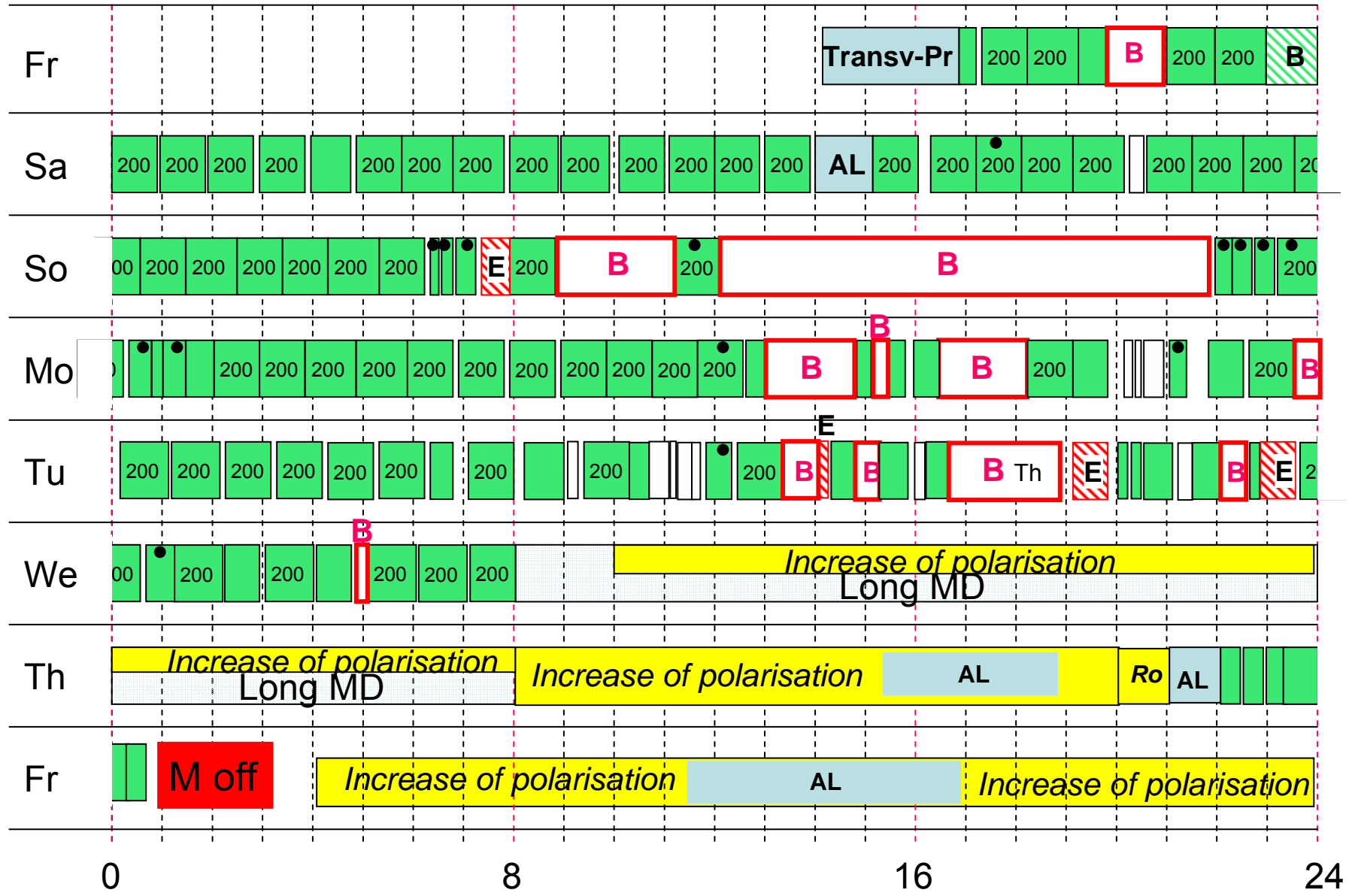
Distribution of used spills:

- transversity runs used 15997 spills, 99.2%
- random_trig runs used 19 spills, 0.1%
- detector_test runs used 15 spills, 0.1%
- alignment runs used 100 spills, 0.6%

DAQ WORKING TIME(green)/BEAM NOT IN HALL TIME(BLACK)/SPS WORKING TIME (BLUE))



1. Period: Excellent Start ... Strong Final, 2. Period: good luck after restart



B = beam problems **E = problems with Exp.** **• = detector flag** **AL = alignment**

Beam and related problems

- **intensity**

mostly o.k.

per spill $(115 - 135) \times 10^{11}$ on T6 and $(1.8 - 2.1) \times 10^8$ at COMPASS

- **spill structure**

sometimes significantly higher spikes (correlated mostly with high intensity)
spikes seem to be correlated with HV trips

- **stability**

beam off: ~12 hrs on Sunday, ~ 4 hrs on Monday, ~ 4 hrs on Tuesday
due to accelerator problems (booster, cooling, RF,) and thunderstorm
unstable periods (in sum about 25 hrs)

Technical problems

- **19.8.:** Due to an interlock on SM2 which was not realized and not communicated by CRN there were problems to start the beam after MD
- **20.8.:** **At 0:55** there was a water pressure problem
different pumps of different water type circuits were stopped simultaneously → **switch off of the target magnet, SM1 and SM2.**
Presently attributed to a faulty behaviour of the pumps processor
The interlock stopped the beam.
Polarization was lost. This costs us roughly 1.5 days.
- from starting transversity
current or only readout of Quad 11 is off by ~11 ams, stable condition
→ **Proposal concerning the SM2 interlock**
 - has to be controlled by the shift crew
 - should be implemented into the slow control
 - should be connected with the target position

DAQ and related problems

- 19.8.: pccoeb02 died → all programs including Cinderella moved to pccoeb01
- 19.8.: AFS problems; system was screwed; used backup
- 19.8.: installation of new version 3.0.0 of errorDumpAll and MurphyTV
- 15.8.: exchange of one catch of BMS3 (access)
- 19.8.: exchange of one catch of SciFiGe (access)

MuonWalls and related problems

- 16.8.: MW1: Low Voltage Power supply has to be restarted (access)
(last week one of the LV supplies was changed)
- *presently no expert on call for MuonWall1*
- 19.8.: MW2: there was some confusion concerning the spectra of the booky
(wrong file was taken to create booky)

RICH and related problems

- numerous stops of the Rich ctrl system at the start of the Run (randomly?)
- 19.8.: two boras could not be started (problem with catch)
solved by adding an additional catch
- 19.8.: Fire wall installed: does not affect programs, but not completely safe
- 19.8.: LV problem: could be fixed during access

MWPC and related problems

- 17.8.: part of plane PA01X1 was missing, (access) connectors checked
problem solved

SciFiG and related problems

- 17.8.: two channels were missing, thresholds were at zero, restored

Trigger and related problems

- **17.8.:** channel 1 of HM505 was missing in the spectrum
check: channel was running and contributing to the trigger
channel reappeared in the spectrum after a while
- **16.8.:** triggers involving HCAL went down by a factor of 2
reason: NIM crate with HCAL LVDS converter died → changed

HV trips and related problems

- **several individual trips of various detectors:
(RICH, Straws, MMegas, MWPS)**
- **several correlated trips of detectors
very likely to be correlated with spikes in the spill structure**

Thanks a lot
for help and cooperation!