Minutes of the PS-SPS Users Meeting held on May 19th 2022

News from the PS&SPS Physics Coordinator (B. Holzer)

Next User Meeting Wednesday (!) 25.5.2022 at 11:00

User Schedule Updates

New schedule version being prepared, including updated user requests.

Temporary documentation of schedule changes:

https://espace.cern.ch/PS-SPS-User-Documents/_layouts/15/WopiFrame.aspx?sourcedoc=/PS-SPS-User-Documents/Parasitic Beam Time Request Form/parasitic_beam_time.xlsx&action=default

- H2
    - week 22: LHCb ECAL
- H8
    - week 21: LHCb
    - week 37: EIC dRICH
- PS EA several changes acording to user request and transparent to other users
    - ALICE ITS3 week 20 and 21
    - STORM setup week 24/25
    - NP07 moved to week 35 and 36

Please use the link above (online excel, please edit it in online mode) to request additional beam time (parasitic or other).
Note the color code:

- your request in black
- already aproved changes in red (main user), green (parallel user) or purple (parasitic user)

PS Machine Report (A. Huschauer)

Difficulties to start up after the TS1, tuning especially for TOF and SFTPRO beams required. Beam back at operational quality around 23:30.

Very encouraging results from FTN RP survey, can continue to provide large beam sizes on the target.

SFTPRO intensity increase ongoing together with SPS as compatible with HiRadMat operation. Constant tuning required for the time being, especially related to TT2/TT10 trajectories. Vertical emittance increased to 4.5 um at 1.8E13 p to reduce splitter losses.

HiRadMat regularly provided to the SPS.

SPS Machine Report (G. Papotti)

AWAKE: 3e11ppb longitudinal unstability: improved situation, will need to investigate further at the start of the next run

HIRADMT run 1 started yesterday, served single bunches so far (pilots and indivs), scheduled until next Tuesday. Access needed today.

SFTPRO
intensity increase ongoing, reached 2.55e13ppb (T2/T4/T6 = 25/70/100);
going in steps to keep an eye on ZS sparking (taking increased vertical emittance);
issues with losses in TT10 being worked on together with PS;
50+100 Hz under control, 200 MHz component improved, 10-25Hz need hunting

Safety (E. Dho, J. Devine, L. Di Giulio)

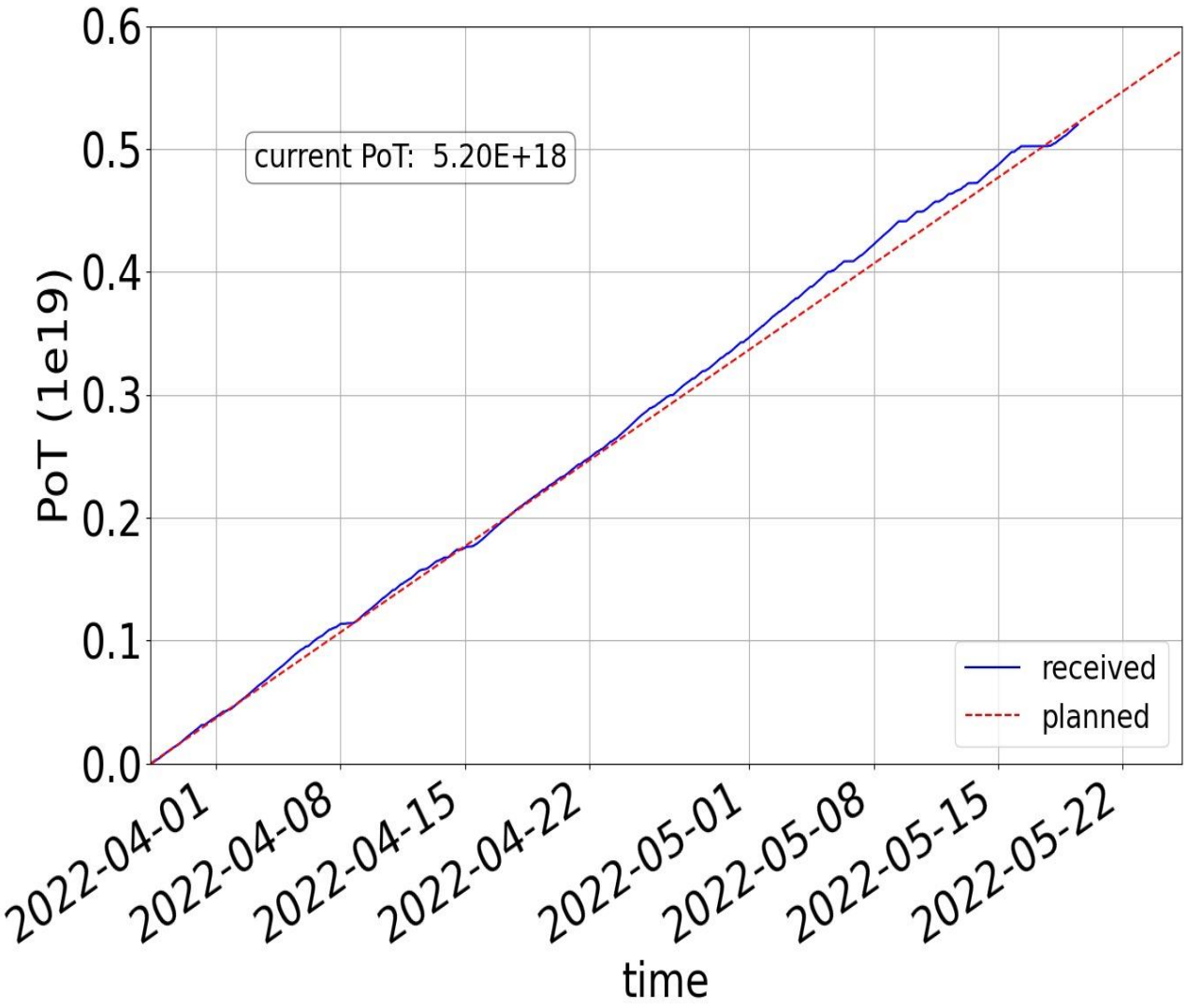
East Area Beam Status (B. Rae, D. Banerjee, J. Bernhard)

No user in T09 for the week. A leak was found in the high pressure XCET which has been fixed during the Technical Stop. No information about T10 user until today, now clarified that Alice ITS3 can continue. Issue with T9/10 area (shared beam line zone): There was a door left open, which can only be closed by selected persons (B. Rae, D. Banerjee, J.Bernhard). Informed in the morning, but beam could not be sent during the night. No user in T11.

n_TOF (M. Bacak)

All fine from n_TOF:

- Power cut in 380 resolved and UPS back in the loop
- TS1: FTN RP survey done - looks promising; bit of tuning for TOF beams when beam back
- Physics continues with 160Gd(n,g) (EAR1) and 79Se(n,g) (EAR2)



East Area Users Tour de Table

T8: IRRAD and CHARM (F. Ravotti)

Access for this week was on Tuesday afternoon (shadow of ITS1): passive samples (EP and TE groups) installed/removed from IRRAD and replaced BPM3 device. ATLAS and CMS pixel / LHCb-EPRD irradiation experiments continue running. Experiment removed from CHARM (BE-CEM electronics), the rest continues. Access yesterday to solve issue with remote-controlled CHARM Montrac (11h-15h). We continue until Wednesday, same standard beam. We are happy to recover un-used EAST spills (if any). Beam conditions, very good: when need to insert in CPS measurement/test cycles for T8 (for BTV, etc.), no problem but, please let us know in advance.

T9: NP07 (Speaker)

T10: ALICE ITS3 (Paolo Martinengo)

Excellent beam conditions
profiting of additional time due to cancellation of next user (ALICE TOF)
Two minor hiccups to report:

- the door upstream the area was left in key access Tuesday afternoon (we don’t have the right to close it)
- yesterday we pushed the emergency button, apologies

North Area Beam Status

H2, H4, H6, and H8 Beams (B. Rae, N. Charitonidis, D. Banerjee, A. Baratto Roldan, A. Gerbershagen, J. Bernhard)

H6: Everything going smoothly.

P42 and K12 Beams (J. Bernhard)

K12 in physics mode. Studies for NA62 GTK planned and to be confirmed (collimation, muon sweeping, smaller beam size). Miniscanner for T10 working, so focusing exercise will be finished this week.

M2 Beam (D. Banerjee)

160 GeV/c muon beam was tuned for COMPASS for their commissioning and 190 GeV/c hadrons were tuned for the AMBER test. 60 GeV/c, 100 GeV/c and 250 GeV/c hadron files are also available which will be tested today. Some troubles with the upstream XWCMs which is being checked by SY-BI.

AWAKE (Giovanni Zevi Della Porta, Edda Gschwendtner)

Second week of 2022 proton run.

- Received proton beam from SPS every day, alternating 1E11 and 3E11 intensities.
    - Mostly nominal optics, but also some large-beam optics to study Run 2c configuration where protons will enter second plasma 10m after the waist
    - At 3E11, occasional proton shots with 20% longer bunch. SPS RF experts reduced this effect to around 1 every 20, and plan to further reduce it by the next run.
    - Gave up beam on Sunday, May 15, following request by other users.
- Good start to 2022 physics program
    - (p+e) After significant efforts we obtained reliable/reproducible electron-seeded self-modulation.
    - (p only)Studied adiabatic focusing of the proton beam in low density plasma.
    - (p only)Studied self-modulation of a large transvere size proton beam.
    - (p only) Studied laser-ionization-front seeded self-modulation at different proton intensities.
    - (p, e, p+e) Collected data for ChDR BPMs commissioning.

HiradMat (P. Simon)

Start of beam time for the ATLAS-ITk experiment on Wednesday 18th May. Beam set-up and delivery as requested. Electronics has experienced a few problems with an access to TT61 in the evening to check the DAQ/power supplies on auxiliary side. Access on 19th May to TNC to check experiment on beam side. While this is on-going NA can profit from no HiRadMat in the cycle.

North Area Users Tour de Table

H2: NA61 SHINE (Wojciech Brylinski)

Started the second test period devoted for detector comissionning. Tests of the BDPs on the beam ongoing. PSD callibration ongoing. Planning the commissioning of the full detector during this beam period. No problems with the beam.

H4: RD51 (Yorgos Tsipolitis)

all 6 setups are ready and take data. Many thanks to the NA team for helping with the instalation and to Nikos for seting up the beam. We will mainly run with muons. On Sunday 22/5 we plan to run with electrons fo the shift 16:00-24:00. We have coordinated with Nikos and he will be present to setup the electron beam, Thanks Nikos.

H4: GIF++ - Week 21 (M.Jäkel)

Not participating in testbeam this week (RD51 Week). Beamtime was very sucessful so far. We will restart testbeam with 7 setups next week (week 21 - shared beam time with RD51) and 8 setups in week 22.

H6: ATLAS AFP (Speaker)

H6: ATLAS HGTD (L. Castillo García, D, Boumediene)

- Resumed data taking after the technical stop till Wednesday ~9am. New samples were tested.
- Dismantling took place afterwards.
- Priorities in testing plan covered.
- Thanks for the beam availability.

H6: ATLAS BCM (Speaker)

H6: ATLAS MALTA (Milou van Rijnbach)

- Parallel user now with EP Pixel at high beam rate. First night running with high beam rate went well.

H6: ATLAS ITK PIXEL - Parasitic, Week 21 (Speaker)

H6: EP PIXEL (D. Dannheim)

- Started data taking at high rate (2-3E6 / spill) on Wednesday morning. Rate limited by radiation level on bridge between H6A and H6B, as before.
- Smooth running with CLICpix2 setup so far. One quick sample change this morning.
- Somewhat longer access planned for tomorrow morning (time t.b.c.), to perform MCP timing measurement and then change to FASTPIX setup.

H6: Parasitic CEDAR Test (Speaker)

H6: CMS PIXELS (B. Ristic)

- We have taken quite some good data since last Wednesday (Thanks for letting us stay in the telescope)
- Setup remains installed as there was no MD this week

    - Telescope turned off due to high intensity
    - Will use time for debugging and tests without telescope
- Removal next Wednesday

H8: LHCb/TimeSPOT (Speaker)

- Resumed data taking after technical stop from Tuesday evening
- We will continue to take data in week 21 as main users

H8: TOTEM (F. Garcia)

The technical inspection has been already carried out (today around 10:00) and we are ready.
In the coming hours we anticipate to start data taken as main user.
Everything seems to be ready and for the next days doing all scans for this test beam.
The DUT is a the first pilot quarter of the nT2, whihc has 14 plastic scintillators readout by a MPPC (SiPM).

K12: NA62 (Mauro Piccini)

First of all many thanks to all the beam groups (LINAC, PS, SPS, North Area) working to deliver the beam to NA62.
The beam quality is strongly improved wrt 2021 once the “bump” has been removed.
Thanks to Giulia Papotti and SPS-RF and OP-SPS groups for the excellent talk given yesterday at our Collaboration Week.
Concerning the past week beam availability and quality was good, since Thursday 12 the 200MHz frequenzy effects were much reduced, the low frequencies (100Hz) are well under control.
Problems after every access with BEND5 (BEND.043.082 of P42).

M2: COMPASS (A. Moretti)

- Technical Stop (16-17/05):
  changeover from NA64μ,
  no beam: survey of the apparatus (to be completed next Wednesday)
- First beam after the TS (17/05):
  first look and online adjustment (thanks to Dipanwita)
- AMBER tests: 18-19/05
- Then (from Today):
  full detector commissioning with beam
  fruitful exchange with Dipanwita about the (secondary) beam intensity for this commissioning phase
- Polarized target
  goal: 40% average polarization over the three target cells in 2 days achieved. Optimizations and tests ongoing

M2: NA64mu (Vladimir Poliakov)

The our beam run was finished on Monday. We accumulated around 80% of planned statistic.
We are lost 12 days of beam time, 2 days due to shifted MD on 16 May and 10 days due to SPS stop. The significant part of our measurements were canceled due to lack of time.

M2: AMBER (Speaker)

Supercycles, Wobbling, Target intensities

AOB

Minutes by the respective speakers, edited by B. Holzer and M. Schwinzerl