

PSI Center for Accelerator Science
and Engineering

RC Report

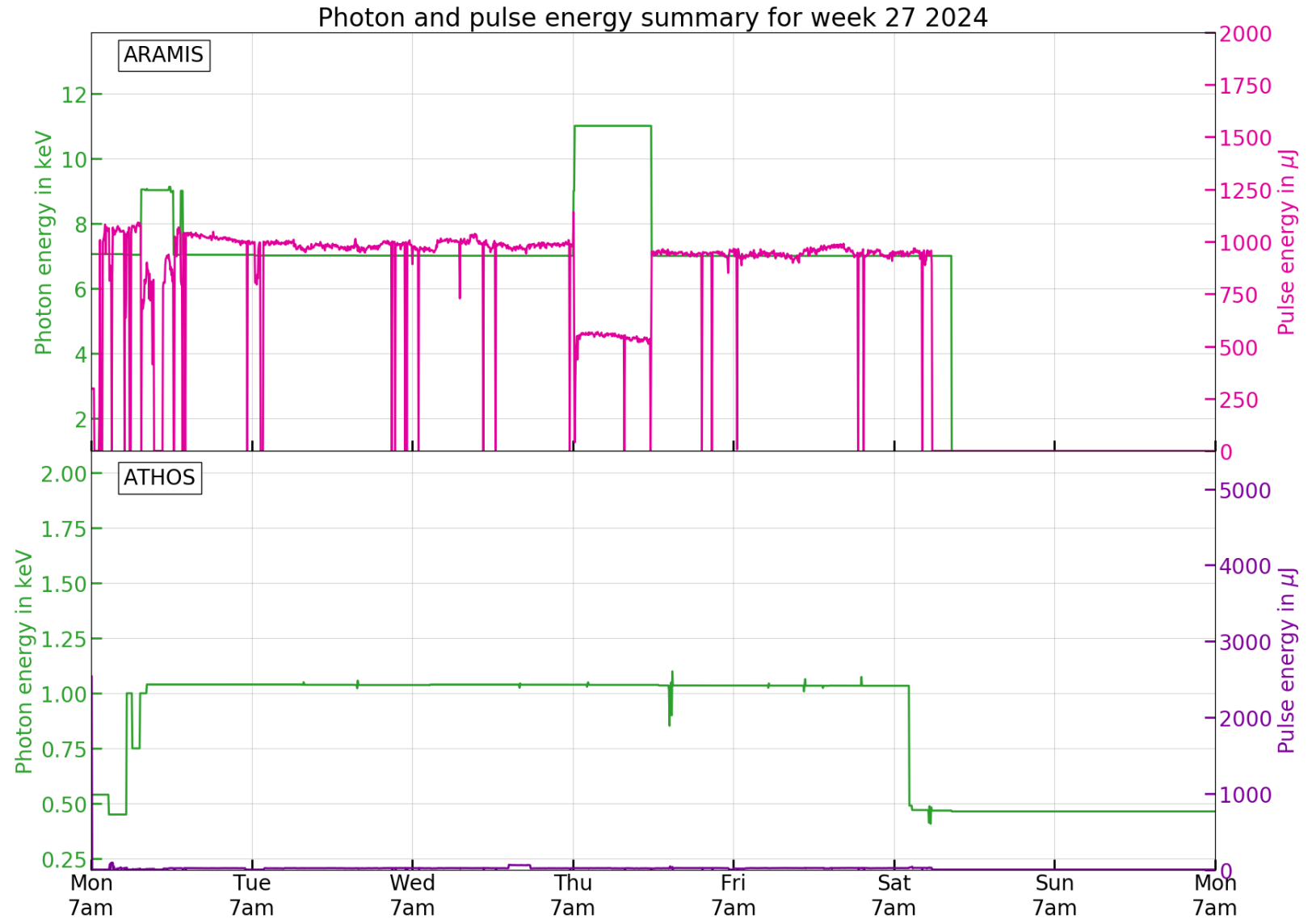
Week 27/2024

Tobias Weilbach
SEM , 08 July 2024

Performance during the Week



- Bernina
 - 7.1 keV, 1 mJ
 - 9.1 keV, 850 μ J
- Alvra
 - 11 keV, 560 μ J
- Maloja
 - 30pC, short pulses
 - 1 keV LH, 20 μ J
 - 450 eV LH, 30 μ J (Setup on Saturday morning with Eduard)



Set-up

Aramis:

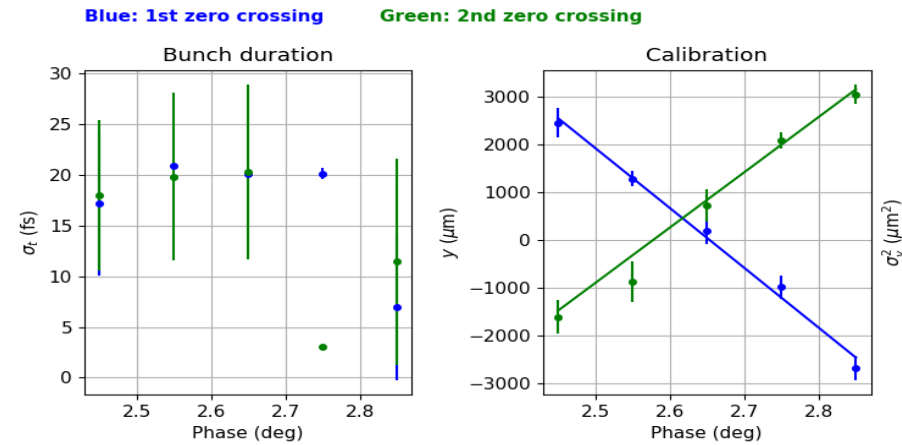
- Bernina: 7.1 keV, 1 mJ & 9.1 keV, 850 μJ
- Alvrá: 11 keV, set-up on Thursday morning by Nicole

Athos:

- 30pC, short pulses, 1 keV LH, 20 μJ & 450 eV LH, 30 μJ (done Saturday morning with Eduard)

Bunch length measurement

RF Deflector: S30CB14 Vertical
Profile Monitor: SARCL01-DSCR170



Bunch duration: 20.2 fs

Calibration: 24.78 $\mu\text{m}/\text{fs}$

1st zero crossing: 20.1 fs

1st zero crossing: 25.75 $\mu\text{m}/\text{fs}$

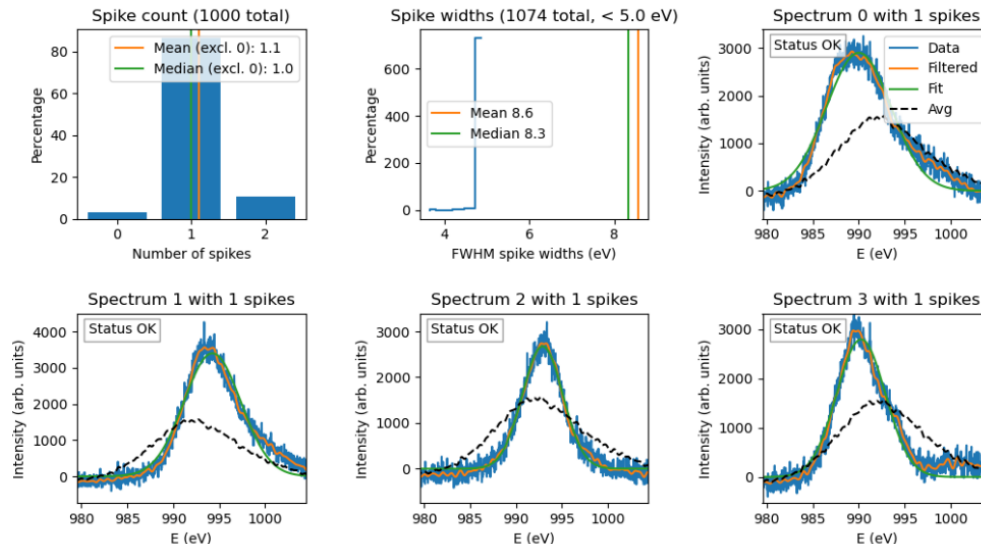
2nd zero crossing: 20.3 fs

2nd zero crossing: 23.81 $\mu\text{m}/\text{fs}$

Time jitter: 11.0 fs

Fits cross at 2.62 deg

Main results for SpectralAnalysis_2024_07_01_18_10_44_396102.h5



Set-up:

- At 9.1 keV high losses -> opening undulators
- WAGO unit for Athos gas detector and optical elements -> fixed during tunnel access
- SATCL02 Dechirper had wrong encoder readings -> fixed during tunnel access
- SATUN10-DBPM070 did not give valid readings -> reboot

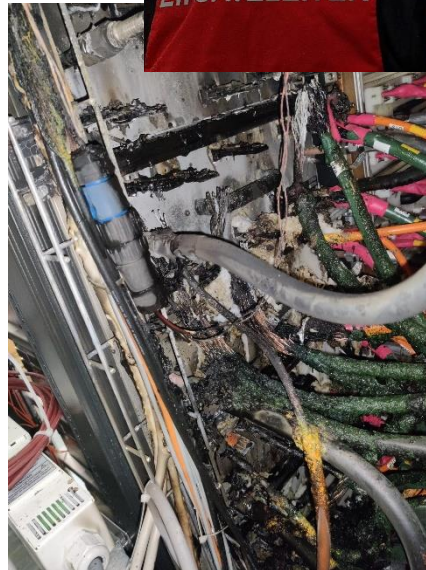
User operation:

- Mizar lost synch. And came back with wrong timing -> established timing with laser pikett (replacement was already foreseen for the summer SD but will happen this week)
- PSYS warning -> part replaced today
- Athos gas detector Keithleys lost correct settings (wrong pulse energy reading) -> initializing brought them back
- Alcor waveplate was increasing -> increased laser output power and check of laser optics today
- All valves in Athos gas detector closed -> opened and set the correct valve positions
- And then Saturday happened....

Fire in SwissFEL

Saturday

- ~12:40 CR called, beam was instable and SINSB04 switched to “Standby”
- During call fire alarm from SwissFEL (OSFA)
- Evacuation of building
- Closed all vacuum valves
- Fire brigade came
- Called RF and electrical installation pikett
- switched off power supplies



No operation this week

**No user operation next week,
maybe MD**

Shutdown 22.7. - 15.8.