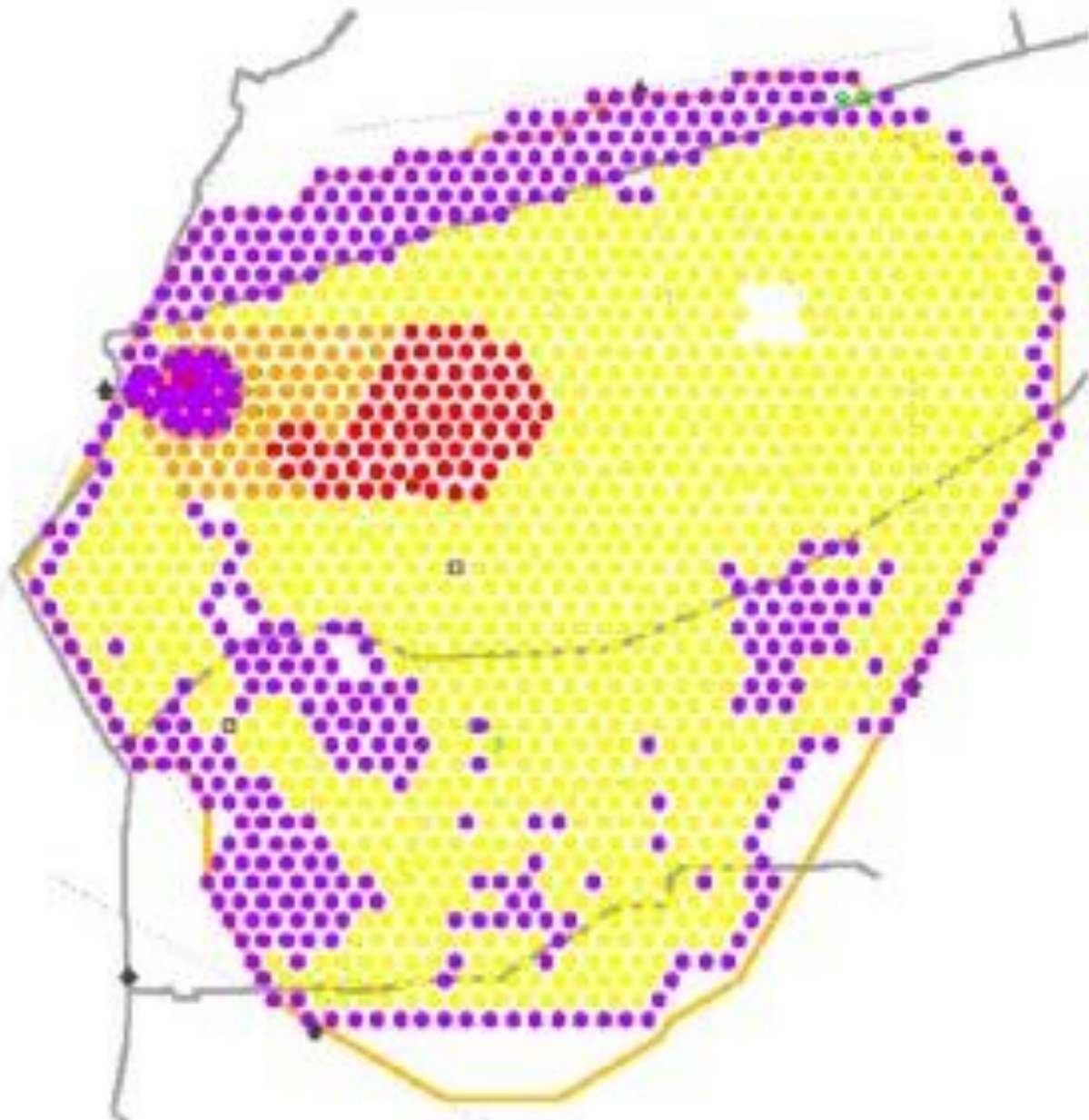


COSA c'è nel campo?

SD Deployment History



mon.auger.uni-wuppertal.de/daily/SD/

DAS | SD | LB | FD | LASER | MONI | AERA | AMIGA | Ticket

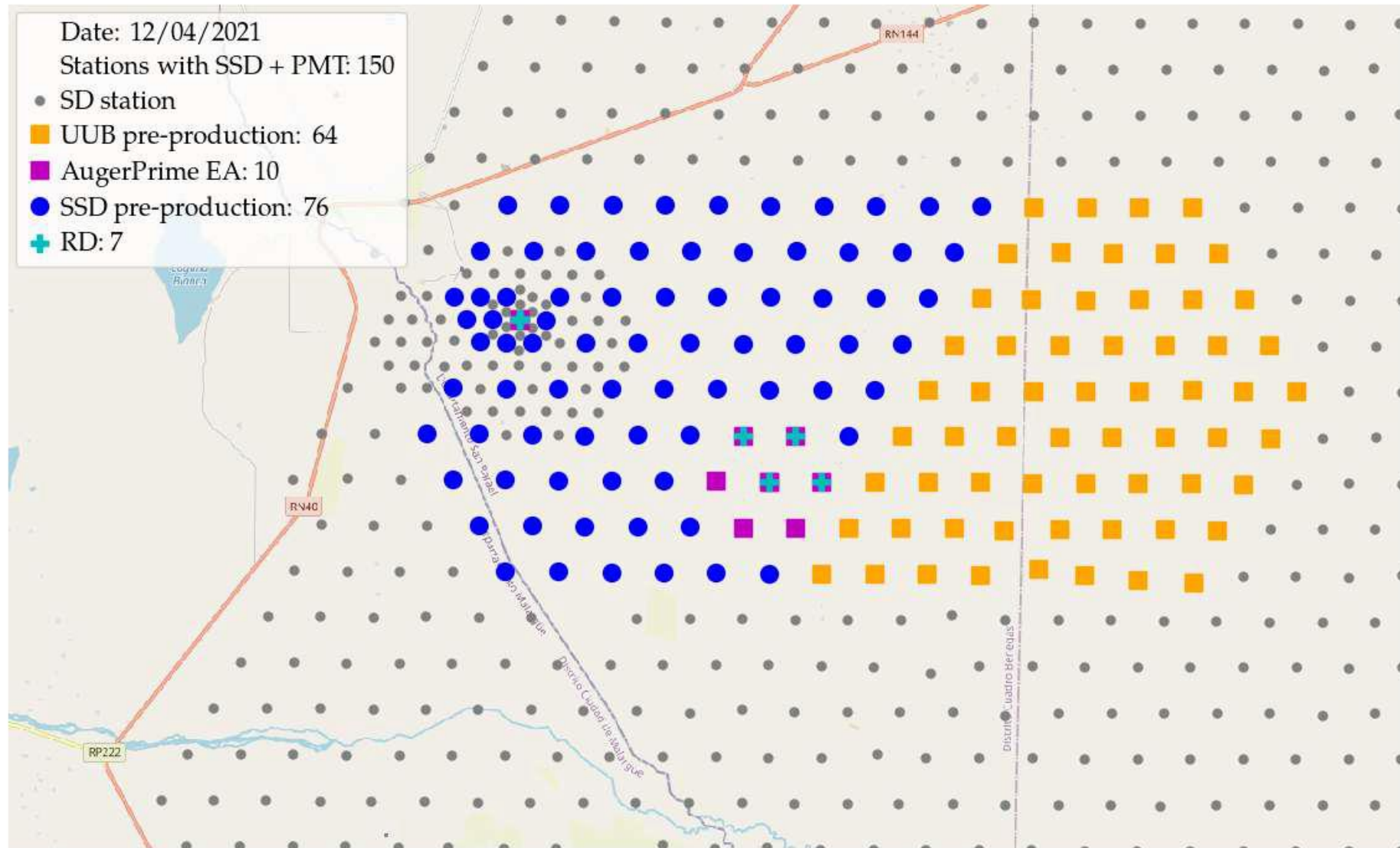
- Main
- Alarms ...
- Black Tanks
- T2 ...
- Triggers ...
- LS ...
- Array...
- Batteries ...
- Deployment
- On Map Finder
- Metrics
- Quality cuts (QC)...
- PMT Commissioning
- SD Report
- Data/Prod files
- Sub Array Monitoring

- SubArray Main page
- AugerPrime
- Preproduction array
- Engineering Array
- SubArray - SSD-PMT connected
- UB

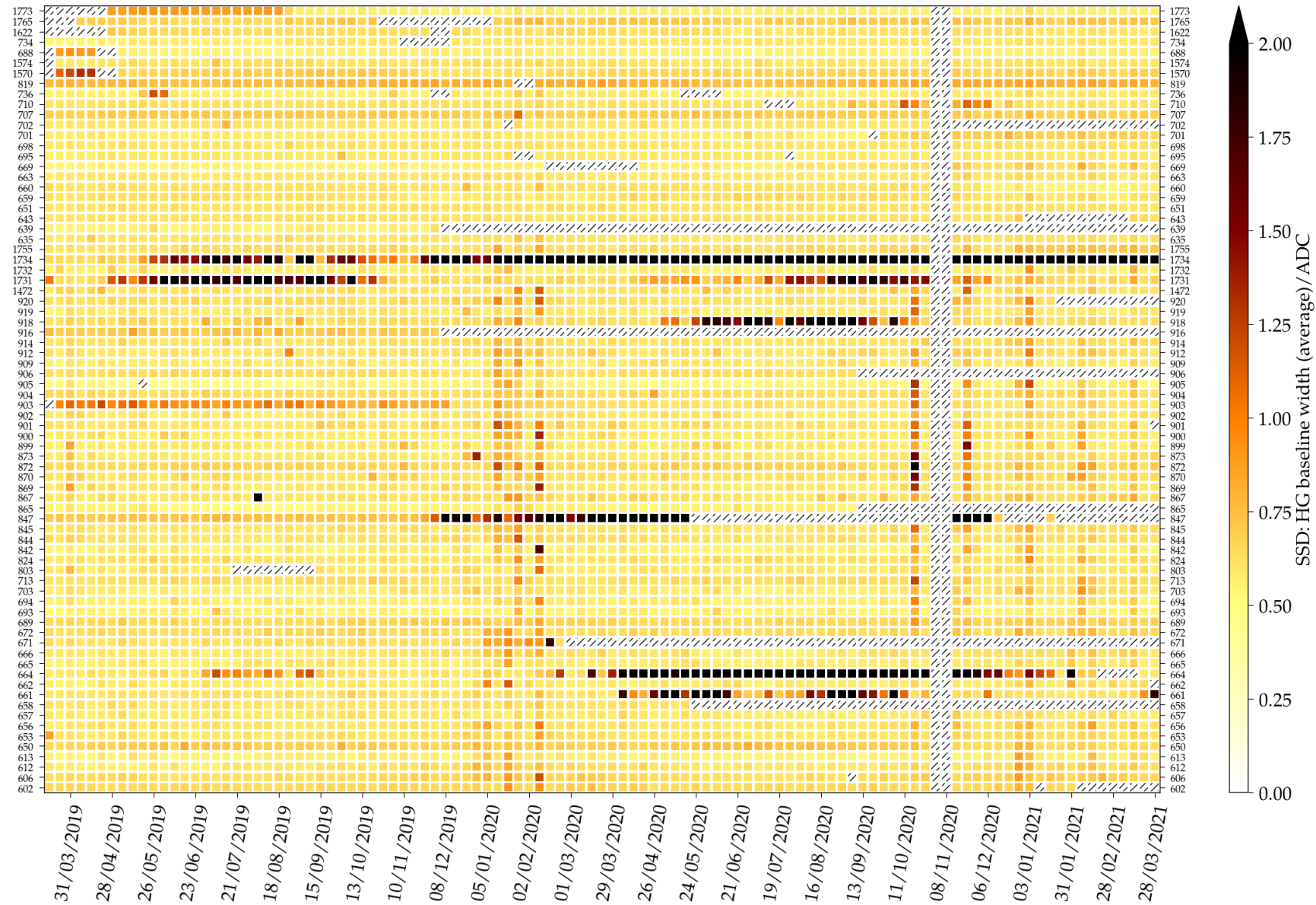
04 14:00:00
04 14:00:00
04 14:00:00
05 09:00:00

With your Time preferences:

76 stations SSD pre-production array (+ LS1317 Anne at SDECO)

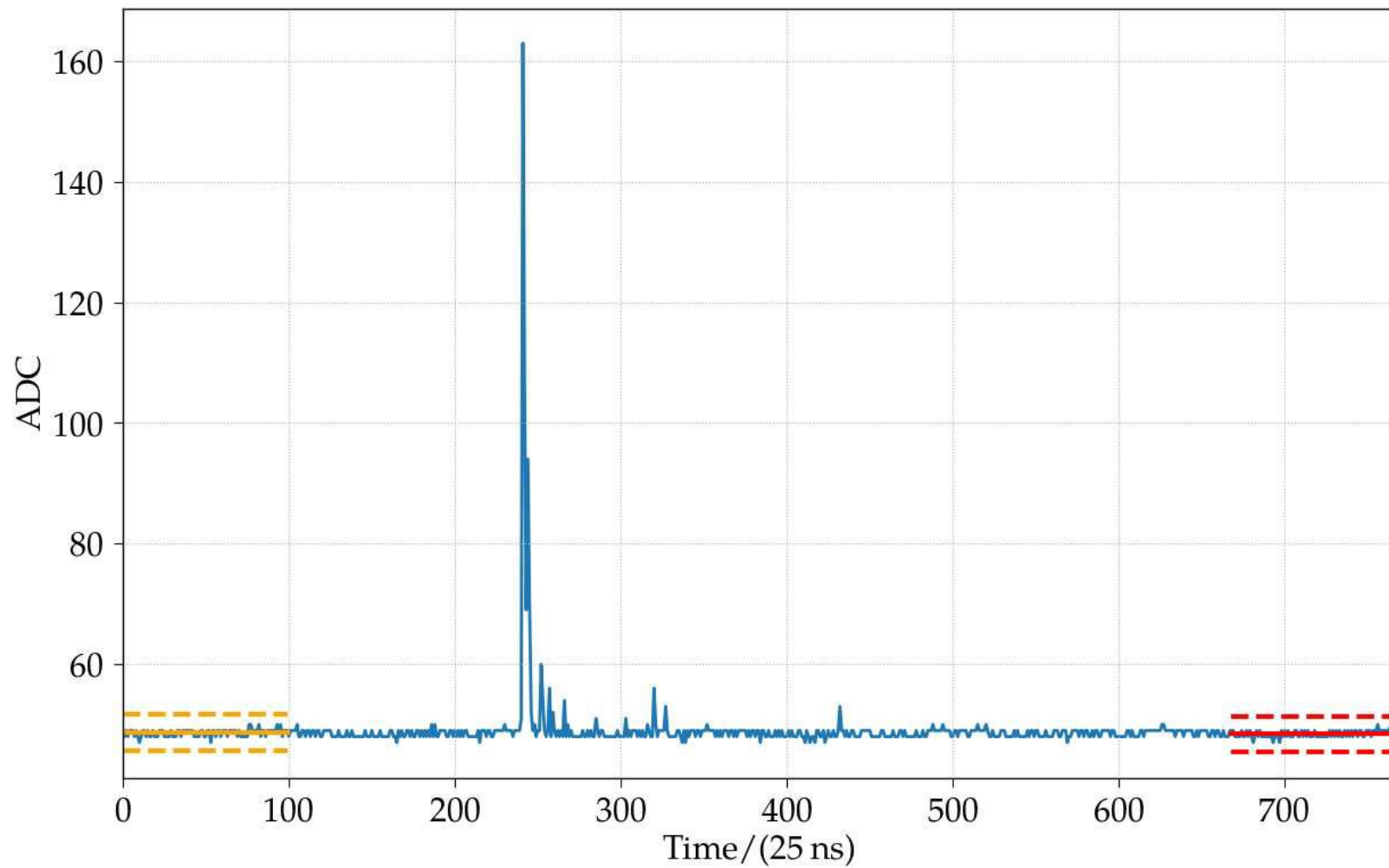


SSD Pre-production array status



Pre-production array status

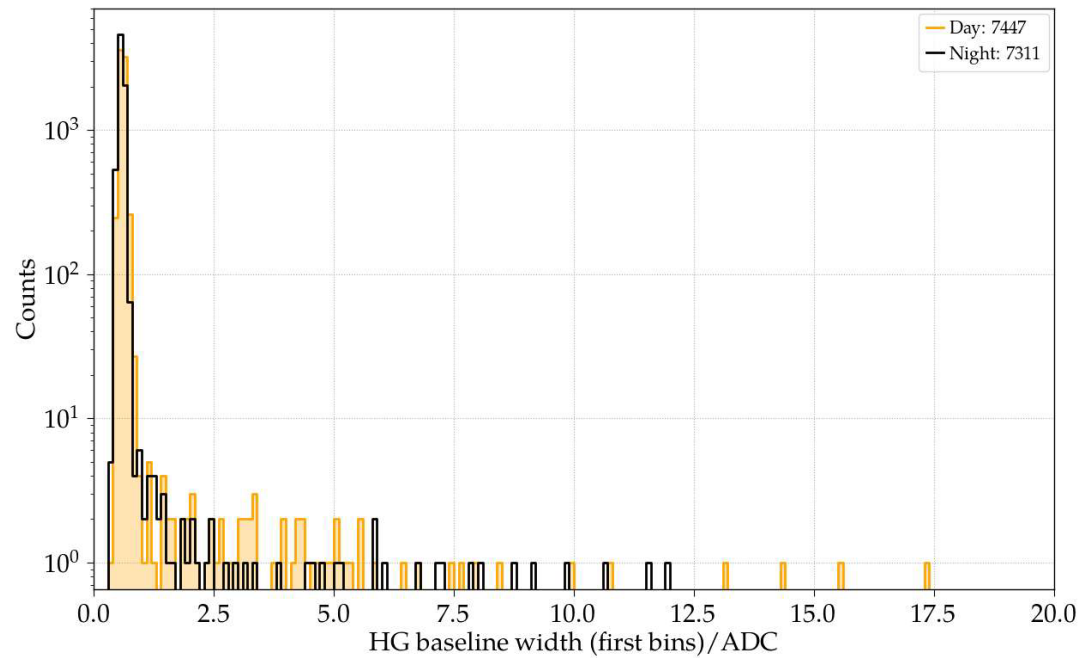
baseline trace definition for UB: First 100 time bins



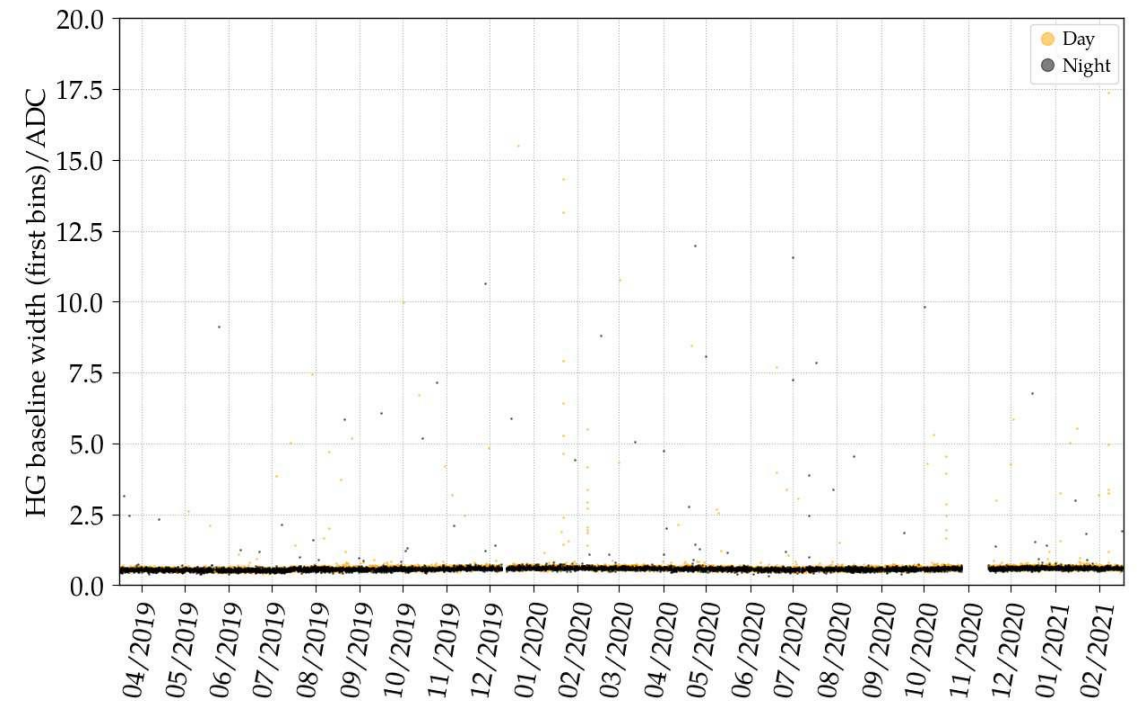
Light tightness checks of deployed SSDs

Search for differences in baseline widths between events detected during day and night hours

SSD PPA station: 612, PMT: SSD, Gain: HG



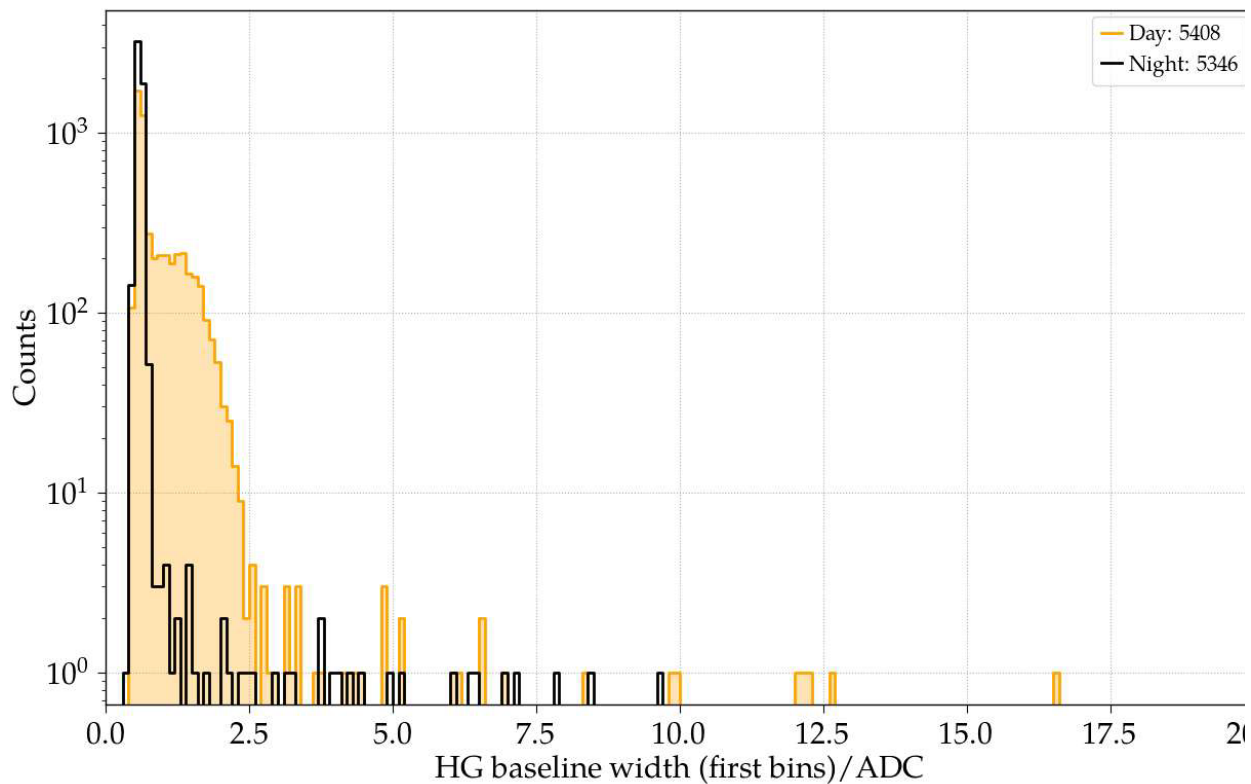
SSD PPA station: 612, PMT: SSD, Gain: HG



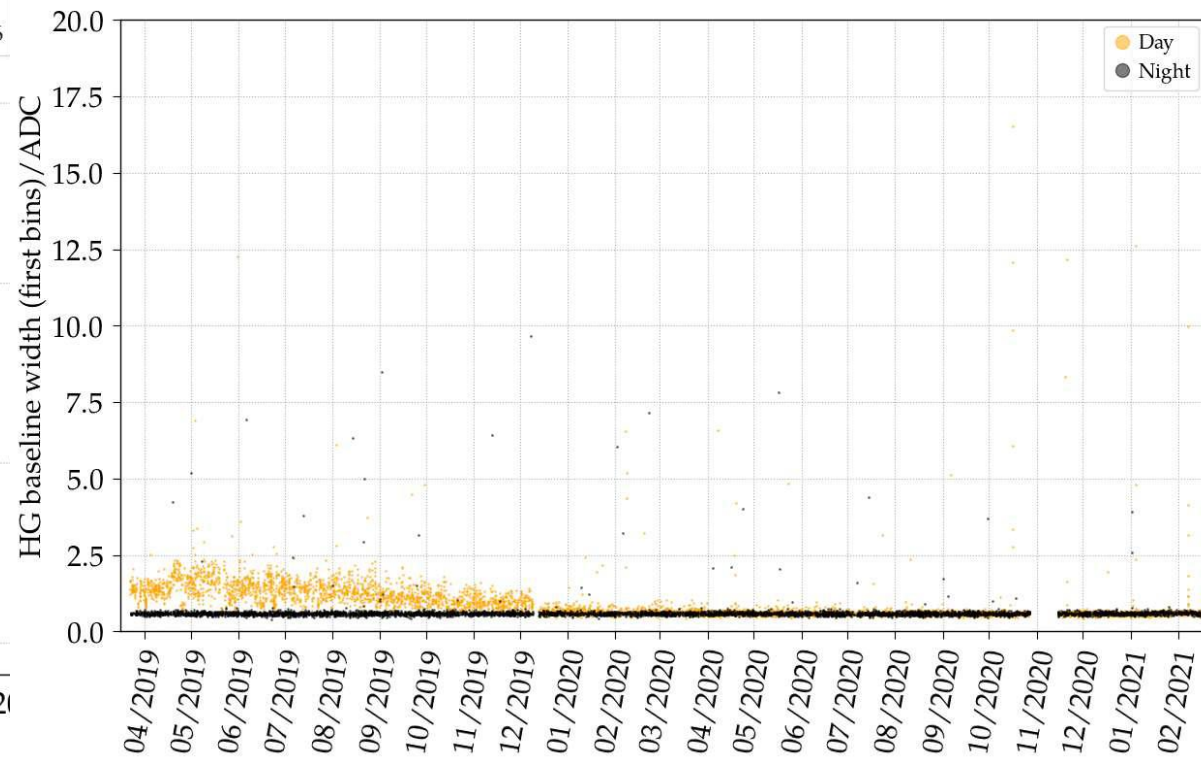
Light tightness checks of deployed SSDs

Search for differences in baseline widths between events detected during day and night hours

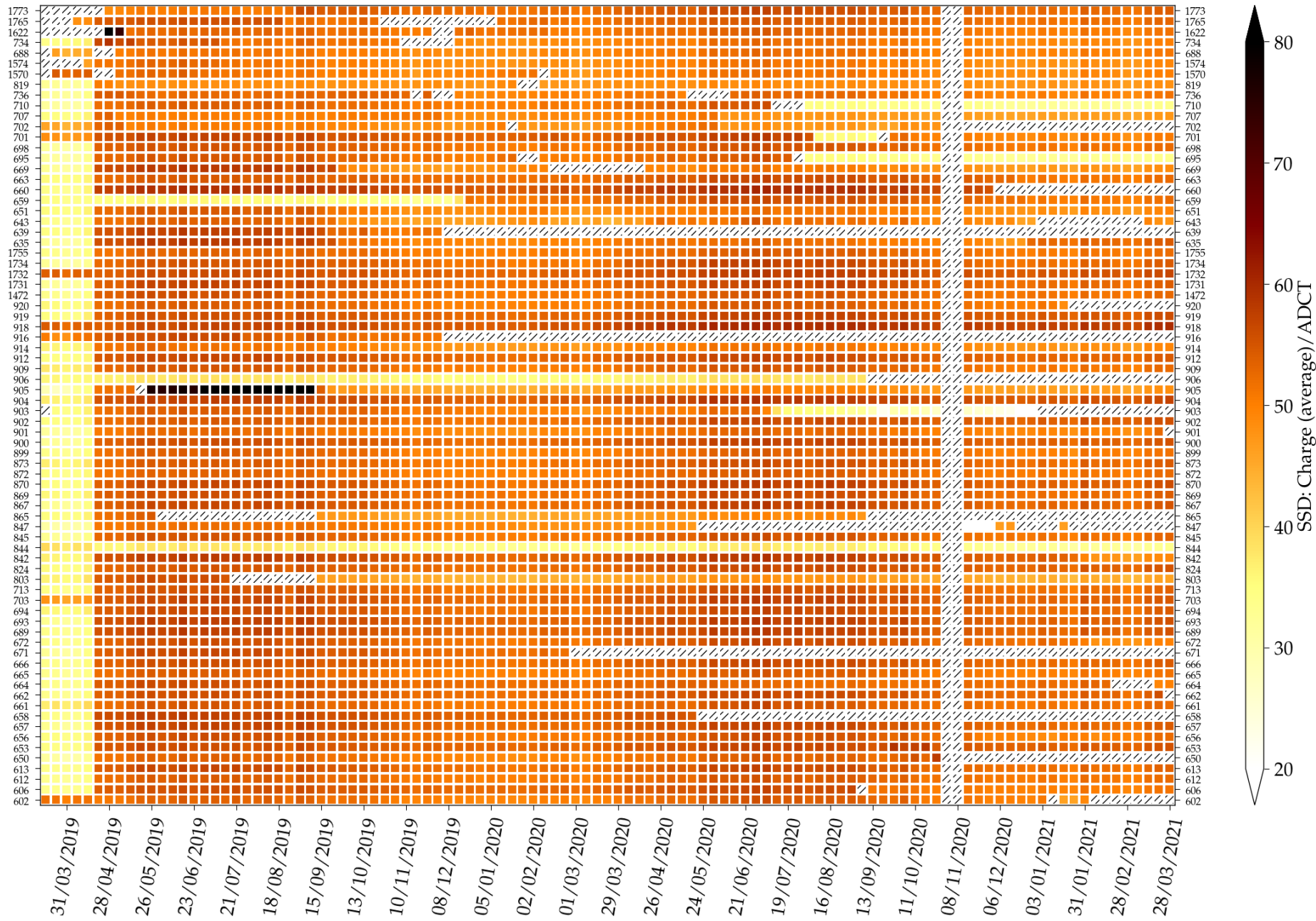
SSD PPA station: 903, PMT: SSD, Gain: HG



SSD PPA station: 903, PMT: SSD, Gain: HG

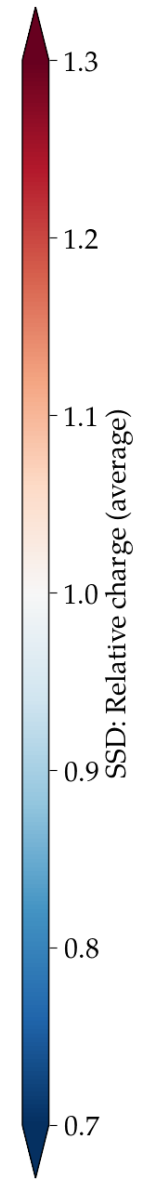
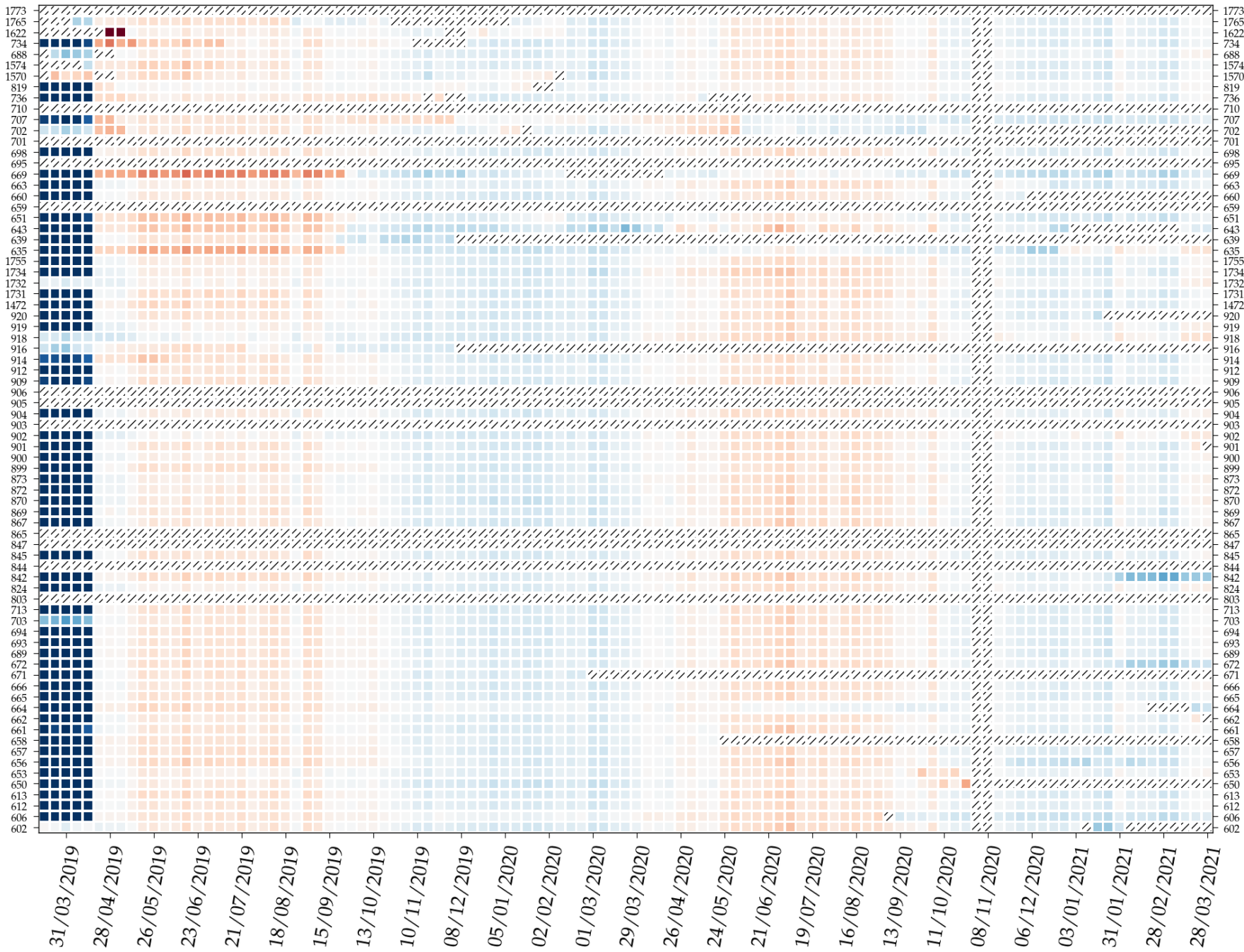


Qualche comportamento singolare!



SSD: Charge (average) // ADCT





Each station is normalized to individual average charge of total period (excluding first 7 weeks)

High Energy Event

Event 57111829 :-)

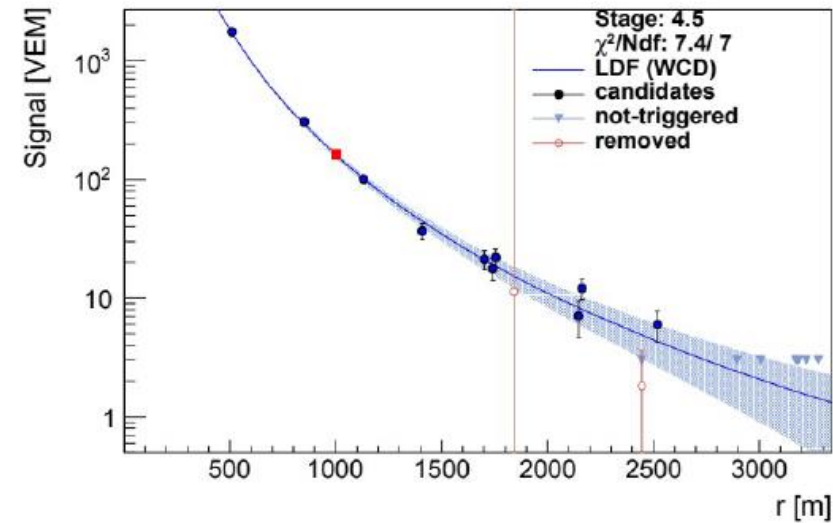
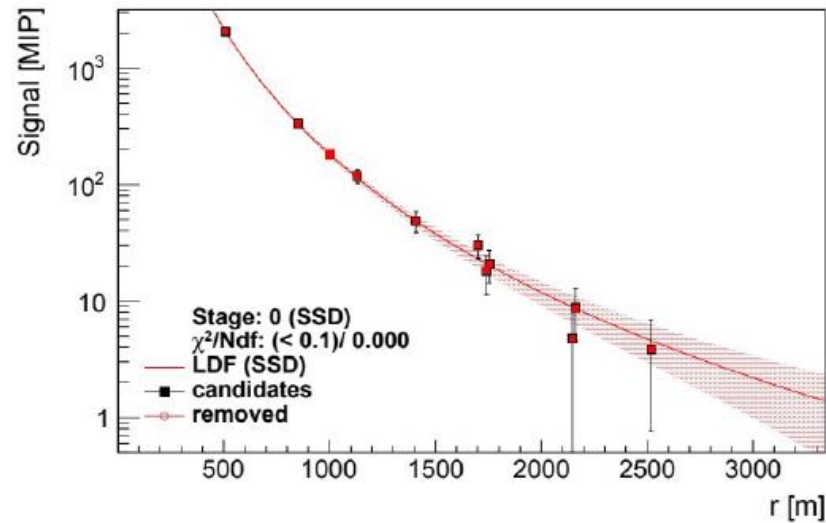
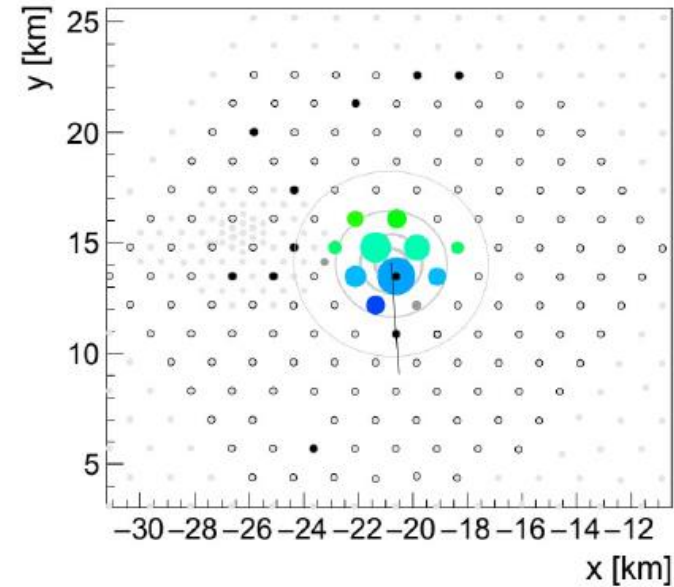
Time (UTC): 2020/2/7 05:44:16
Time (GPS): 1265089474 s 370057000 ns
Trigger: 3TOT & 4C1; 6T5 5T5
Stations: 10 (Acc: 1, Bad: 84)

Full reconstruction (4.5)

$E = (3.31 \pm 0.10 \pm 0.09) \times 10^{19}$ eV
 $(\theta, \phi) = (31.6 \pm 0.2, 273.3 \pm 0.4)$ deg
 $(x, y) = (-20.79 \pm 0.02, 14.05 \pm 0.01)$ km
 $S1000 = 163.5 \pm 4.8 (\pm 4.2)$ VEM
 $\beta = -2.36 (\pm 0.17), \gamma = 0.10, r_{\text{opt}} = 910$ m
radius = 8.25 ± 0.37 km

Monitoring

average stations age: 14.6 yr
 $T = 16.3^\circ\text{C}; T(\text{day}) = 19.2^\circ\text{C}$



SSD data analysis in general: Offline svn trunk which is updated regularly.

For the analysis of the SSD PPA stations with UB, there is the ExampleApplication "SdSSDDataReconstruction" in Offline that can reconstruct also SSD events. the Offline ExampleApplication "*SdSSDDataReconstruction*" contains a module used to recover the incorrect online charge and peak estimates for the SSD PMTs (module called "*SdEACalibrationFiller*"). This application is only available in the **Offline dev trunk**, i.e. it's not included in the latest Offline release.

After the calibration I extract all the information about the PMT traces, calibration histogram fits, etc. into files. The plotting and event analysis (for example the day-night-comparisons) are then done on these extracted value tables. In principle, this could also be done with the CDAS access to the raw data information. But it probably requires some modifications of some functions and algorithms.

This application is also used to create the official Observer production for the SSD PPA.

If you also want to include SSD PPA event reconstruction information like LDFs, etc. the option would be using the Offline application from above or taking the ADST files from the Observer production.

The situation in the "CDAS user" framework looks a bit different. The raw data is available and accessible, and a few adaptations were made in the calibration part, but there is nothing implemented concerning SSD reconstruction, etc. For the UUBs, everything is a bit more complicated in Offline and CDAS since the latest board version and software changes.

There are preprocessed ADST for the PPA on the Observer servers, that can be downloaded <https://web.ikp.kit.edu/augeroracle/doku.php?id=auger:observer>

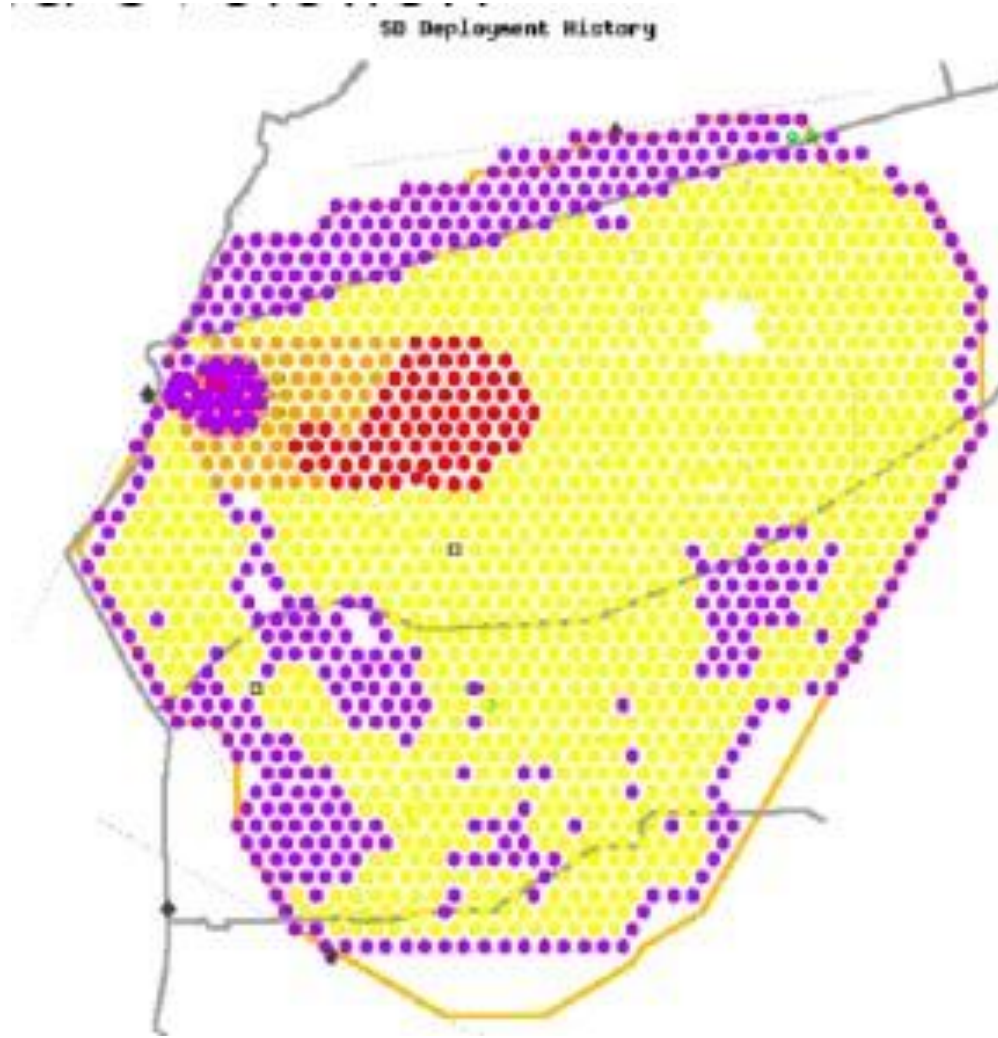
Data from SSD Pre-Production Array

/data/SSDPreProduction/

Reconstructed events of the SSD pre-production array (PPA), which consists of 77 surface detector stations with UB electronics outfitted with SSDs. Targets include the SD-1500 (SD) and SD-750 (SDInfill). Both include calibrated traces and signals for SSDs and WCDs. For the SD-1500, the fit to the SSD lateral distribution and the corresponding reconstructed “shower size” $S(1000)$ is included in addition to that of the WCD. Information on the application used to reconstruct these data and suggested quality cuts may be found [here](#).

SSD+UUB

Analisi analoghe
sulla stabilità



Total >60 pre-production UUBs, together with SPMT and SSD PMT installed on site and taking data

DAS | SD | LB | FD | LASER | MONI | AERA | AMIGA | Ticket

- Main
- Alarms ...
- Black Tanks
- T2 ...
- Triggers ...
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- Array...
- Batteries ...
- Deployment
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- SubArray Main page
- AugerPrime
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04 14:00:00

04 14:00:00

04 14:00:00

05 09:00:00

With your Time preferences:

Problematiche da **commissioning puro** –

Dipendenze da fattori tipo: luce, temperatura.

Stabilità di operazione:

Ottimizzazione della tensione di lavoro SSD per avere il range dinamico da progetto.

Controllo della stabilità, ma anche definizioni di condizioni di «alert»

I rivelatori sono parte di **Auger** –

Il trigger utilizzato ora «a partire da quello di WCD» è il solo possibile? (simulazione/analisi)

Ricostruzione/LDF analisi nel complesso.