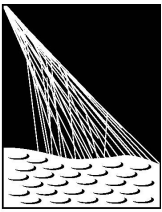


AugerPrime SDEU ORR

Overview and answers to some points

Tiina Suomijärvi
for the SDEU team

Malargüe, 10 November 2024



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Open questions

SDEU ORR 1st report

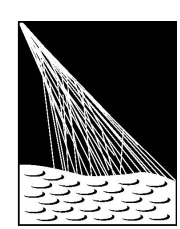
7. Items considered not finished

Open issues which do not require a delay in the formal procedure but should be required to be finished by the task:

1. Low/high gain ration to be used in data analysis
2. Monitoring and Alarms
3. Compatibility mode of "new" triggers MoPs and ToTd
4. Transferring the databases for the UUB-factory, UUB-thermal, SPMT and SPMT-HV tests to Malargue for secure storage and unified access by the collaboration. The storage of the database-dumps at Lyon could serve as alternative.

8. Additional suggestions

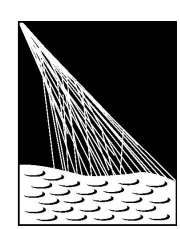
1. Validation of the documentation by persons involved in the maintenance
2. Redundant oscilloscope for the SPMT test-setup
3. Online-calibration of SSD
4. Online charge calibration of LPMT



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Agenda

- Overview, Tiina Suomijärvi (15 min, including points 7.2, 8.1, 8.3, 8.4)
- LG/HG ratio, Martina Bohacova (5 min, point 7.1)
- MoPS and ToTd, Dave Nitz (10 min, point 7.3)
- Transferring data bases, Matthias Kleifges, Martina Bohacova (5 min, point 7.4)
- SPMT, Antonella Castellina (5 min, points 7.2, 7.4 and 8.2 for SPMT)
- Questions and discussion



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Points 7.2, 8.1

Point 7.2 Monitoring and Alarms

The list of SC items have been given to the Monitoring task. The PMT masks are working and transferred to DAQ. The implementation of alarms is done by the Monitoring task. Further information on SPMT monitoring in A. Castellina's talk.

Point 8.1 Validation of the documentation by persons involved in the maintenance

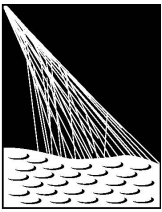
The documentation for the SDEU, UUB and Small PMT is located in 2 sites (software excluded):

- CERN EDMS → <https://edms.cern.ch/project/CERN-0000174820>
- Pierre Auger Observatory → <https://www.auger.org.ar/SDEU/>

UUB software and firmware are stored in the Auger git lab.

This documentation concerns: schematics, components and drawings, list of spare parts, test&assembly procedures. It is available for the staff.

The test&assembly procedures have been validated by the maintenance staff who has already been using these procedures extensively. The maintenance and tracking documentation in Malargüe is created by the staff responsible for maintenance at the Observatory.



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Points 8.3 and 8.4

Point 8.3 Online-calibration of SSD

The adjustment of the HV is done similarly to that of the WCD PMTs. SSD calibration is performed offline using charge histograms. The SSD group is developing an online MIP charge and peak value measurement (GAP2024-065). The online MIP peak value will be usable for SSD monitoring and, later, for SSD triggers. For more details, refer to P. Filip's talk on the Indico of the Orsay F2F meeting, available on the SDEU Wiki.

We don't see any issues in integrating online MIP into DAQ once it has been developed.

Point 8.4 Online charge calibration of LPMT

The online charge for LPMT is now available and in DAQ. See SDEU Commissioning meeting minutes on 3 Sept. 2024 on the SDEU Wiki.

References:

SDEU wiki: https://www.auger.unam.mx/AugerWiki/SDEU_Front_Page

GAP2024-068 Noise levels of AugerPrime electronics