

The GRANDProto300 antenna and acquisition board

Friday, May 28, 2021 6:30 AM (20 minutes)

GRAND is a newly envisioned Giant Radio Array for Neutrino Detection with a sensitivity large enough to be able to measure cosmic neutrinos in all reasonable scenarios. In its final configuration, it will consist of 200,000 radio antennas distributed over ~20 sub-arrays worldwide with a total area of 200,000 km². GRANDProto300 is created to further develop the hardware, software and trigger strategies for the full array. In our current stage of development we have reduced costs with respect to previous radio arrays while increasing functionality and monitoring. In this contribution, I will highlight the design of the readout system with a special emphasis on the 500MSPS ADC interface implemented in the FPGA part of a System on Chip (SoC). Next to this, the various peripherals on the board are discussed with their integration in the Linux kernel running on the processor part of the SoC. In addition, the first measurements on the performance of the whole readout chain will be presented.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

Funding information

Primary author: HABRAKEN, Rene (Radboud | Nikhef)

Presenter: HABRAKEN, Rene (Radboud | Nikhef)

Session Classification: Plenary

Track Classification: Readout and Data Processing: Readout: Trigger and DAQ