The upgrade of the Pierre Auger Observatory with the Scintillator Surface Detector

Executive Summary

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What is this contribution about?

One of the elements of the upgrade of the Pierre Auger Observatory: the new Scintillator Surface Detector (SSD) placed on top of the Water-Cherenkov stations.

Why is it relevant/interesting?

At the Observatory, the integration of the components and their deployment in the array is well advanced. The main challenges and characteristics of the construction and installation and the long-term performance of the detectors are presented.

What has been done?

In March 2019, a preproduction array of 77 SSDs started data acquisition with an adapted version of non-upgraded electronics. It is collecting events and proving the goodness of the design. Since December 2020, the upgraded electronics boards are being deployed in the field together with the photomultiplier tubes, increasing the number of detectors that are taking data continuously with good stability.

What is the result?

The data collected so far demonstrate the quality of the new detectors and the physics potential of the upgrade project.