

The Pierre Auger Observatory Upgrade

Thursday, 14 May 2009 16:00 (25 minutes)

It is planned to operate the Pierre Auger Observatory until the end of 2024. An Upgrade of the experiment has been proposed in order to provide additional measurements to allow to elucidate the mass composition and the origin of the flux suppression at the highest energies, to search for a flux contribution of protons up to the highest energies and to reach a sensitivity to a contribution as small as 10% in the flux suppression region, to study extensive air showers and hadronic multiparticle production.

With operation planned until 2024, event statistics will more than double compared with the existing Auger data set, with the critical added advantage that every event will now have mass information. Obtaining additional composition-sensitive information will not only help to better reconstruct the properties of the primary particles at the highest energies, but also improve the measurements in the important energy range just above the ankle. Furthermore, measurements with the new detectors will help to reduce systematic uncertainties related to modeling hadronic showers and to limitations of reconstruction algorithms.

A description of the principal proposed Auger upgrade will be presented.

The Auger upgrade promises high-quality future data, and real scope for new physics.

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