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Status of the AugerPrime upgrade of the Pierre Auger Observatory

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The Pierre Auger Observatory has been very successful to determine many aspects of the highest-energy cosmic rays including, among others, the flux suppression at energies above 4x10^19 eV, stringent upper limits on photon and neutrino fluxes at ultra-high energies and an unexpected evolution of the mass composition with energy. We expect an extension of the frontiers of our knowledge on these aspects from a major upgrade of the Observatory. The upgrade, known as AugerPrime, will include an addition of a 4 m^2 Surface Scintillator Detector atop each Water Cherenkov station of the Surface array. The new detectors will provide us with an unprecedented opportunity of performing a complementary measurement of the shower particles and thus determine the primary mass composition with good accuracy on an event-by-event basis. AugerPrime will also include an upgrade of electronics, installation of the AMIGA Underground Muon Detector and a change of observation mode of the Fluorescence Detector, which will increase its current duty cycle by about 50%. Current status of the upgrade with the main focus on the Surface Scintillator Detectors will be presented following a brief description of the physics motivation for the upgrade.

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