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AugerPrime: the upgrade of the Pierre Auger Observatory[1] FREDERIC SARAZIN, Colorado School of Mines, PIERRE AUGER COLLABORATION COLLABORATION — The nature and origin of ultra-high energy cosmic-rays (UHECRs) remain largely a mystery despite a wealth of new information obtained in recent years at the Pierre Auger Observatory and elsewhere. Mass composition studies performed at Auger appear to challenge the historical view that the UHECR primaries (at least for energies greater than 10^{19} eV) are all protons, and the observation of a GZK-like flux suppression in the cosmic-ray spectrum is counterbalanced by the absence of point source observations and the relatively weak anisotropy of the UHECR sky. In order to resolve this apparent contradiction, the Pierre Auger collaboration is embarking in an upgrade of the Observatory ("AugerPrime") with the goal of extending the mass composition measurements beyond the observed flux suppression. In this presentation, the science case for the upgrade and its technical realization will be described and discussed especially with regards to the existence of GZK photons and neutrinos.

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