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Searches for ultra-high energy neutrinos and photons with the Pierre Auger Observatory

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Ultra-high energy (UHE) neutrinos and photons travel undeflected through cosmic magnetic fields, and point directly to the sources in which they were produced. As such, they have the potential to unveil the locations of the still unknown sources of UHE cosmic rays. The surface detector of the Pierre Auger Observatory is sensitive to UHE neutrinos and photons with energies above 1 EeV and 10 EeV respectively. Inclined air showers (zenith angle 60° or larger) induced by neutrinos of all flavours (downward- going), and "Earth skimming"tau neutrinos (upward-going) can be identified through the broad time-structure of the signal that is expected to be induced in the detector. UHE photon-induced air showers can be distinguished from hadronic ones on the basis of observables sensitive to the mass composition of the primary particle. In this talk I will present the most recent results from these searches, and discuss the astrophysical implications of these findings for the sources of UHE cosmic rays.

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