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## Ultra-high energy neutrino searches and GW follow-up with the Pierre Auger Observatory

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The surface detector (SD) of the Pierre Auger Observatory is sensitive to neutrinos at energies in the 100 PeV to 100 EeV range. This sensitivity, together with its large acceptance, makes it a complementary detector to other neutrino telescopes, which have their peak sensitivities at lower energies. The neutrino-induced air showers that the SD of the Pierre Auger Observatory is sensitive to can be divided into those induced by interactions of neutrinos of any flavor deep in the atmosphere, and those induced by charged-current interactions of tau neutrinos in the Earth's crust. Both of these types can be efficiently distinguished from cosmic ray-induced air showers, provided that their zenith angles are larger than 60 deg. As no neutrino candidates were found in the performed searches, we present limits on the diffuse all-flavor neutrino flux. Using these limits, we obtained constraints on cosmic-ray and neutrino production models. In the light of the recent observations of gravitational waves (GW), we also present the follow-up of LIGO/Virgo GW events. These include binary black hole merger events and also GW170817, the only binary neutron star merger ever observed directly.

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