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The Highest Energy Frontier

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The study of cosmic rays beyond 10ˆ18 eV gives us glimpses into the most energetic phenomena in the universe since the Big Bang. Projects such as the Pierre Auger Observatory, the HiRes Experiment and the Telescope Array have demonstrated the extragalactic origin of the most energetic particles. They have mapped out particle arrival directions on the sky to look for evidence of sources, have searched for neutrino, photon and neutron candidates at the highest energies, have measured proton interaction cross sections beyond the reach of the LHC. They have studied the mass composition of the highest energy particles, have investigated the effects of magnetic fields on the propagation of particles across cosmological distances, are busy untangling the transition between Galactic and extragalactic sources, and are joining the worldwide chorus of multimessenger studies to seek violent but distant transient events in the cosmos. Meanwhile new techniques are being devised for increased sensitivity in the realm of lowest particle fluxes. We will review the latest results and prospects at the highest energy frontier.

Oral or Poster Presentation

Oral

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