

Cosmic particle accelerators

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Cosmic particle accelerators fill our Galaxy and intergalactic space with high-energy particles; these accelerators reach extreme energies and high efficiency of energy conversion. The deflection of particles in galactic magnetic fields makes it, however, difficult to directly identify their sources; only at ultrahigh energies is astronomy with cosmic rays conceivable. Cosmic accelerators can, however, be imaged and diagnosed by secondary neutral particles created in interactions near the particle sources, such as neutrinos and in particular gamma rays. Rapid progress in instrumentation has allowed significant progress in recent years in these areas; the presentation aims at giving an overview of current results and understanding of cosmic accelerators, and of open issues.