



The origin of the most energetic particles in the Milky Way: Galactic Pevatrons and their implications

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Abstract: Our galaxy is filled with cosmic rays -particles traveling at nearly the speed of light through intergalactic magnetic turbulence. We generally understand how these particles gain energy, but a major mystery remains: How do some of them reach extreme 'PeV' energy levels in the Milky Way?

The powerful cosmic engines responsible for this, nicknamed 'PeVatrons,' are still hiding from us. In this talk, I will explain the physics needed to reach these speeds and look at which objects in the Milky Way might be capable of doing it. I will compare our theories with the latest measurements to show exactly what we know today. To wrap up, I'll look at how we plan to finally track down these mysterious sources, which have puzzled us for over 100 years.

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