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Deciphering Cosmic-Ray Anisotropies

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The arrival directions of Galactic cosmic rays are highly isotropic. This is expected from the presence of turbulent magnetic fields in our Galactic environment that repeatedly scatter charged particles during propagation. However, various cosmic-ray observatories have identified weak anisotropies of TeV-PeV cosmic rays on various angular scales and with relative intensities of up to a level of 1 part in 1,000. Whereas large-scale anisotropies are generally predicted by standard diffusion models, the appearance of small-scale anisotropies down to an angular size of 10 degrees is surprising. In this talk I will summarise the current experimental status of cosmic-ray anisotropies and review theoretical ideas for their origin on large and small scales.
