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Large-scale and multipolar anisotropies of cosmic rays detected at the Pierre Auger Observatory with energies above 4 EeV

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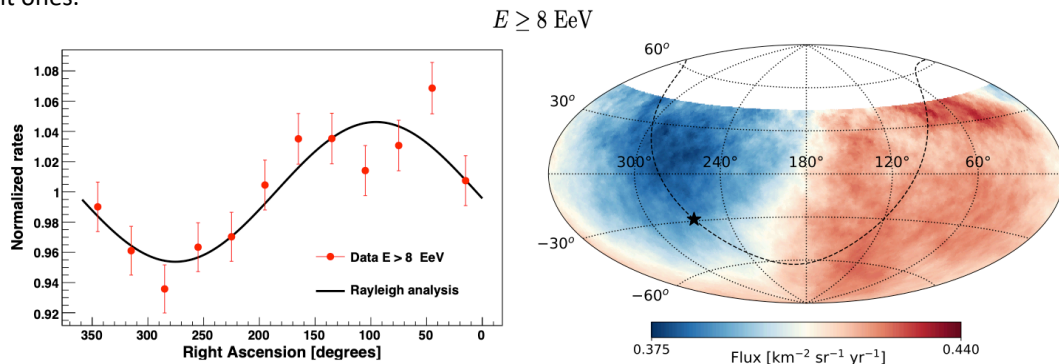
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What is this contribution about?

This contribution presents updates of searches for large-scale and multipolar anisotropies in the arrival directions of cosmic rays detected by the Pierre Auger Observatory.

Why is it relevant/interesting?

Anisotropies are expected because of the larger relative contribution to the flux at high energies from nearby sources, that are more anisotropically distributed, than the integrated flux from the distant ones.



What has been done?

We reconstructed the dipolar and quadrupolar components through a combined Fourier analysis of the event rate in right ascension and azimuth and measure the angular power spectrum of events detected above 4 EeV.

What is the result?

The statistical significance of the large-scale dipolar modulation observed above 8 EeV has increased to 6.6σ . The amplitude of the dipole increases with energies. All other multipoles are not significant.