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Search for the sources of ultra-high-energy cosmic rays

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The arrival directions of ultra-high-energy cosmic rays, with energies above 8 EeV, reveal a dipolar structure pointing away from the center of our Galaxy, thus indicating an extragalactic origin of cosmic rays at the highest energies. In this contribution, it will be demonstrated that the observations can be explained by assuming that the sources follow the large scale structure of the universe. Based on a model that includes the extragalactic propagation and Galactic magnetic field deflections, the source density can be constrained, which allows for valuable conclusions on the possible source types.
At the highest energies, anisotropies at intermediate angular scales arise, which can be interpreted as contributions from individual sources. Promising candidates that can explain all observations are the nearby radio galaxy Centaurus A, as well as local starburst galaxies.
This contribution will provide an overview of the ongoing search for the sources of ultra-high-energy cosmic rays, as well as an outlook to the future.

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