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## **Anisotropies of ultra-high energy cosmic rays diffusing from extragalactic sources**

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The large angular scale distribution of UHECRs is expected to become an important tool to infer CR properties in the near future, as a considerable statistics is being gathered by the Pierre Auger and TA observatories. Here we obtain the dipolar anisotropy of cosmic rays diffusing from nearby extragalactic sources. We discuss both the energy regime of spatial diffusion and the quasi-rectilinear one leading to just angular diffusion at higher energies. We obtain analytic results for the anisotropies from a single source which are validated using numerical simulations. For a scenario with a few sources in the local supercluster (with the closest source at a typical distance of few to tens of Mpc), we discuss the possible transition between the case in which the anisotropies are dominated by a few sources at energies below few EeV towards the regime in which many sources contribute at higher energies. The effect of a non-isotropic source distribution is also discussed, showing that it can significantly affect the observed dipole.

### **Summary**

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