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Anisotropies in GeV-TeV cosmic ray electron and positron fluxes

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High energy cosmic ray electrons and positrons probe the local properties of our Galaxy. In fact, electromagnetic energy losses limit the typical propagation scale of GeV-TeV electrons and positrons to a few kpc. In the diffusion model, nearby and dominant sources may produce an observable dipole anisotropy in the cosmic ray fluxes.

We present a detailed study on the role of anisotropies from nearby sources in the interpretation of the observed GeV-TeV cosmic ray electron and positrons fluxes.

We compute predictions for the anisotropies from known astrophysical sources as supernova remnants and pulsar wind nebulae of the ATNF catalog.

Our results are compared with current anisotropy upper limits from the Fermi-LAT, AMS-02 and PAMELA experiments.

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