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Multi-wavelength constraints on cosmic-ray leptons in the Galaxy

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Cosmic rays (CR) interact with the interstellar medium and the magnetic field in the Milky Way, producing diffuse emission from radio to gamma rays. Observations of this diffuse emission and comparison with detailed predictions are powerful tools to unveil the CR distribution and to study CR propagation. We present various GALPROP CR propagation scenarios based on current CR measurements. The associated synchrotron emission is compared to radio surveys and synchrotron maps from WMAP and Planck, and the leptonic interstellar gamma-ray emission is calculated. Finally we discuss how information from radio and microwave observations can be used in studying CR characteristics and diffuse emissions with Fermi-LAT, especially at low energy.

Collaboration

– not specified –

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