



Contribution ID : 34

Type : Oral

The Galactic positron flux and dark matter substructures

Abstract content

Observation of cosmic-ray positron spectrum at the HEAT experiment indicates an excess at high energies (>8 GeV). It is suggested that the excess may be associated with dark matter annihilation. We calculate the Galactic positron flux from dark matter annihilation in the frame of supersymmetry, taking the enhancement of the flux by existence of dark matter substructures into account. The propagation of positrons in the Galactic magnetic field is solved in a realistic numerical model GALPROP. The secondary positron flux is recalculated in the GLAPROP model. The total positron flux from secondary products and dark matter annihilation can fit the HEAT data well when taking a cuspy density profile of the substructures.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

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Session Classification : HE 3.3

Track Classification : HE.3.3