ID contributo: **28** Tipo: **Experimental part: Review of the latest results**

Follow-up study of Geminga's Contribution to the Local Positron Excess with the High Altitude Water Cherenkov Gamma-Ray Observatory

The PAMELA, Fermi-LAT, and AMS-02 experiments measured a local excess of positrons above energies of 10 GeV. This excess has been considered to be due to dark matter interactions or the presence of nearby astrophysical sources. Here, I present preliminary results on the follow-up study of diffusion in the region of the pulsar Geminga with approximately five years of HAWC data. I implement a new analysis with templates that contain spectral and spatial information of the Geminga pulsar using the HAWC Accelerated Likelihood (HAL) and the Multi-Mission Maximum Likelihood framework (3ML). With this template method, I study the diffuse gamma-ray emission of electrons from inverse Compton scattering with low energy photon fields, i.e., microwave background radiation, for different diffusion coefficients in the range of 10^{25}-10^{28} cm^2/s and different electron spectral indices 1.5-2.4. The preliminary results using this method are in agreement with those of Fermi-LAT and HAWC.

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