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Follow-up Analysis of Geminga's Contribution to the Local Positron Excess with the HAWC Gamma-ray Observatory¹ RAMIRO TORRES ESCOBEDO, Shanghai Jiao Tong Univ, HAWC COLLABORATION — The PAMELA, Fermi-LAT, and AMS-02 experiments measured a local positron excess above energies of 10 GeV. The reason for this excess is not well understood but has been considered to be due to dark matter particle mechanisms or the presence of nearby astrophysical sources. I present preliminary results for the follow-up study of the Geminga pulsar's possible contribution to this positron excess with 1343 days of HAWC data. In this study, I implement a spatial template interpolation method using 3D templates that contain spectral and spatial information of gamma-ray emission coming from electrons diffusing away from the pulsar for energies in the range of 100 GeV - 100 TeV. This model can further incorporate the proper motion of the pulsar and anisotropic diffusion of electrons/positrons. Using this model, I study the gamma-ray emission for electrons/positrons diffusing with coefficients of 10^{25} - 10^{28} cm²/s at 1 GeV and spectral indexes of 1.5 - 2.4.

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Ramiro Torres Escobedo
Shanghai Jiao Tong Univ

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