

Abstract Submitted
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Very-High-Energy Solar Gamma Rays From Cosmic-Ray Interactions¹ BEI ZHOU, KENNY NG, JOHN BEACOM, ANNIKA PETER, Center of Cosmology and AstroParticle Physics (CCAPP), Ohio State University (OSU), Columbus, Ohio 43210, USA, CARTSEN ROTT, Department of Physics, Sungkyunkwan University, Suwon 440-746, Korea — Cosmic-ray induced gamma rays from the Sun has been observed up to 100 GeV. However, there are no theoretical predictions beyond 10 GeV. We provide the first calculation of the hadronic disk component in TeV-PeV, where solar magnetic fields can be ignored. We also consider the leptonic gamma-ray halo, taking into account electrons from local pulsars. With Fermi and soon HAWC LHAASO observations, our results provide new insights on local cosmic rays, solar magnetic fields, and solar dark matter studies.

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Bei Zhou
Ohio State Univ - Columbus

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