Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Rise of the Leptons: Pulsar Emission Dominates the TeV Gamma-Ray Sky TIM LINDEN, The Ohio State University — Recent HAWC observations have found extended TeV emission coincident with the Geminga and Monogem pulsars. In this talk, I will show that these detections have significant implications for our understanding of the TeV gamma-ray sky. First, the spectrum and intensity of these TeV Halos indicates that a large fraction of the pulsar spindown energy is efficiently converted into electron-positron pairs. This provides observational evidence supporting pulsar interpretations of the rising positron fraction observed by PAMELA and AMS-02. Second, the isotropic nature of this emission provides a new avenue for detecting nearby pulsars with radio beams that are not oriented towards Earth. Lastly, I will show that the total emission from all unresolved pulsars produces the majority of the TeV gamma-ray flux observed from the Milky Way, allowing us to set strong constraints on TeV dark matter models.

Tim Linden
No Company Provided

Date submitted: 06 Jan 2018 Electronic form version 1.4