Sources of cosmic e- and e+ in the Milky Way

In collaboration with M. Di Mauro & S. Manconi
Based on https://arxiv.org/abs/2010.13825 (sub. PRD)

We assess that the nature of the hardening in the AMS-02 e- data around 42 GeV is due to the interplay between pulsar (e+, e-) and supernova remnant (e-) emission, and not to Inverse Compton scattering (ICS) energy losses

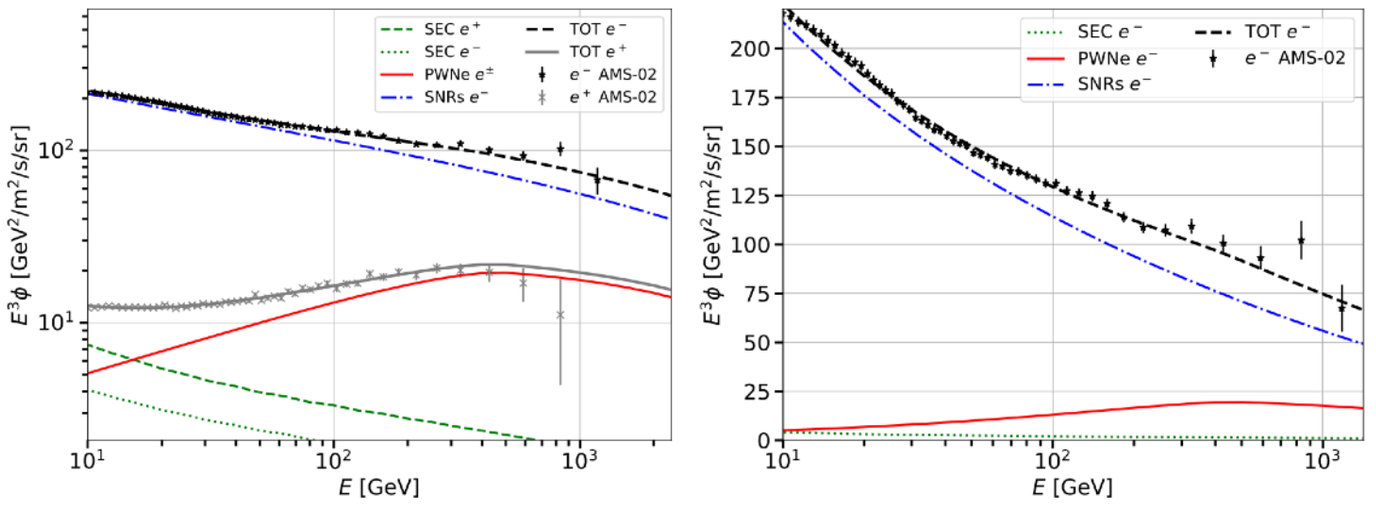

FIG. 4. Left Panel: Result for the combined fit to e^- and e^+ AMS-02 data (black and grey data points). We show the secondary production of e^+ (dashed green line) and e^- (dotted green line), $e^\pm$ from PWNe (solid red line), e^- from SNRs (dot-dashed blue line). Right Panel: same as the left panel but zooming in the e^- sector.

1. We fit simultaneously e+ & e- AMS-02 data
2. Explain the hardening of AMS-02 as due to PWN
3. Determine the significance of PWN contribution to e- spectrum
4. Demonstrate that a poor approximation of ICS cross section can reproduce the observed flux hardening