

Searching for a population of soft gamma-ray pulsars

Thursday, 15 April 2021 07:15 (15 minutes)

The Fermi Large Area Telescope (LAT) has detected ~250 gamma-ray pulsars in its > 10 years of operation. The gamma-ray emission from most of these pulsars peaks in the GeV range, where the LAT is most sensitive; perhaps not surprisingly, only a handful of them fall in the “soft” gamma-ray category. While Fermi pulsars are teaching us much about the pulsar mechanism, the full picture is still incomplete. Soft gamma-ray pulsars appear to be an interesting and distinct population: typically single-pulsed, very young, extremely energetic, and with strong magnetic fields, these pulsars populate a part of the parameter space not probed extensively by Fermi. Indeed, even the archetypal example of a soft gamma-ray pulsar, PSR B1509-58, detected with COMPTEL over 20 years ago, remains challenging to study with Fermi LAT. Using LAT data in conjunction with X-ray observations (Chandra, XMM, Swift, and NuSTAR), I will describe our attempts to find additional soft gamma-ray pulsars with Fermi and will discuss the prospects of planned space missions in the MeV domain to uncover a larger population of these MeV pulsars in the future.

Primary author: SAZ PARKINSON, Pablo (The University of Hong Kong)

Presenter: SAZ PARKINSON, Pablo (The University of Hong Kong)

Session Classification: Exploring the Galaxy: Pulsars and Pulsar Wind Nebulae

Track Classification: Pulsar