

*Contributed Talk //*



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Before the launch of the Fermi Large Area Telescope (LAT) in June 2008, fewer than a dozen gamma-ray pulsars were known. The number of detections increased to 46 based on 6 months of LAT data in The First LAT Pulsar Catalog (1PC), and to 117 in the second LAT Pulsar Catalog (2PC), which used 3 years of data. The third LAT Pulsar Catalog (3PC) will contain light curves and spectral data for about 280 gamma-ray pulsars based on 12 years of data. Phase-resolved spectroscopy has been performed for a few bright young pulsars such as the Crab, Vela, and about 25 millisecond pulsars (MSPs). We will make use of the newly released 3PC to perform a systematic study involving phase-resolved spectroscopy (which isolates the spectra of particular phase ranges of each pulsar light curve) on two different samples of pulsars (16 MSPs and 15 young pulsars) to confirm preliminary and find new trends such as a relation between the peak brightness and the hardness of the spectrum, or the spectral apex energy and spin-down power. These two samples have been selected to include the brightest candidates that exhibit various light curve profile shapes, ranges of spin-down powers, and different radio pulse characteristics. In this talk, we present the criteria of the source selection, the phase range definitions for our spectroscopy, and the preliminary spectral analysis results. We will conclude by providing theoretical prospects for this work.