

P1 and P2 Emission of the Crab Pulsar for Medium to Large-Size IACT Calibration

Friday 16 July 2021 19:18 (12 minutes)

Mid to large size imaging atmospheric Cherenkov telescopes for gamma-ray astrophysics in the very high energy domain have a typical threshold of (20 –200) GeV. In this energy range sensitive observations of the Crab Nebula reveal the emission from the Crab pulsar at phases P1 and P2. Observations of MAGIC show that the P2/P1 is monotonically increasing function of energy. In tens of GeV energy range sensitivity of MAGIC overlaps with that of the Fermi-LAT mission. Comparison of the P2/P1 ratio from the MAGIC and Fermi-LAT Crab pulsar data provides an alternative method to cross-calibrate the two instruments and minimize the impact of Monte Carlo simulations. Here we explore this possibility for absolute calibration of the operational energy range of IACTs.

Keywords

IACT; calibration; Crab pulsar; pulsar emission phase; IACT-Fermi intercalibration; P1 and P2

Collaboration

other Collaboration

Subcategory

Experimental Results

Primary author: Dr MIRZOYAN, Razmik (Max-Planck-Institute for Physics)

Co-authors: CERIBELLA, Giovanni (Max-Planck-Institut für Physik); IWAMURA, Yuki (ICRR, University of Tokyo, Japan); Prof. SAITO, Takayuki (ICRR); Prof. TESHIMA, Masahiro (ICRR, UTokyo/Max-Planck-Institute for Physics, Munich); Dr D'AMICO, Giacomo (University of Bergen, Max-Planck-Institute for Physics)

Presenter: Dr MIRZOYAN, Razmik (Max-Planck-Institute for Physics)

Session Classification: Discussion

Track Classification: Scientific Field: GAI | Gamma Ray Indirect