Contribution ID: **1419** Type: **Talk**

A new GeV-TeV particle component and the barrier of cosmic-ray sea in the CMZ region

Monday 19 July 2021 19:18 (12 minutes)

The Galactic center is widely anticipated to be an important cosmic-ray source and the observations of some Imaging Atmospheric Cherenkov Telescopes did successfully reveal a new component of TeV-PeV cosmic rays in the vicinity of the Galactic center. This work reports the identification of GeV-TeV cosmic rays in the central molecular zone with the γ-ray observations of the Fermi-LAT. The spectrum and spatial gradient of the GeV-TeV source component are consistent with that measured by the Imaging Atmospheric Cherenkov Telescopes. The inferred cosmic-ray energy density is, however, substantially lower than the so-called cosmic-ray sea component. Our finding is in support of the presence of high energy particle accelerator at the Galactic center and strongly suggests a barrier that can effectively suppress the penetration of the particles from the cosmic-ray sea to the central molecular zone.

other Collaboration

Keywords

Collaboration

Subcategory

Experimental Results

Primary authors: HUANG, Xiaoyuan; Dr YUAN, Qiang; Dr FAN, Yizhong

Presenter: HUANG, Xiaoyuan

Session Classification: Discussion

Track Classification: Scientific Field: GAD | Gamma Ray Direct