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Galactic Ridge flux in LHAASO

Galactic Ridge is brightest central part of Milky Way Galaxy with $|l| < 30°$.
It was detected by Fermi LAT in gamma-rays up to 3 TeV. Recently it was detected by ANTARES and IceCube in neutrinos. Here we study flux of Galactic Ridge in LHAASO km2a data.

We show that the total flux measured by LHAASO km2a above 10 TeV lies exactly at the extrapolation of the Fermi/LAT Galactic Ridge spectrum. This indicates a very good cross-calibration between the two instruments. The Fermi/LAT + LHAASO/km2a measurements are consistent with the ANTARES and IceCube neutrino
flux estimate, which indicates that the gamma-ray flux is dominated by the pion decay emission from proton interactions. The model fit suggests that the proton spectrum has cut-off at the PeV energies and that the spectrum of the cosmic
rays in the inner Galaxy is harder (slope Γ ⊠ 2.4) than the locally measured spectrum (slope Γ ⊠ 2.7)

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