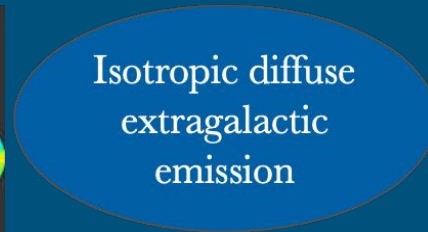
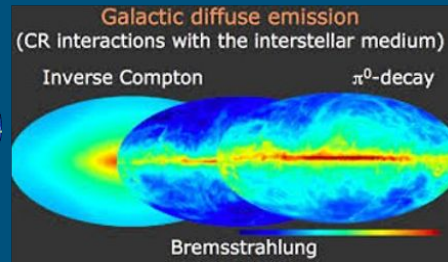
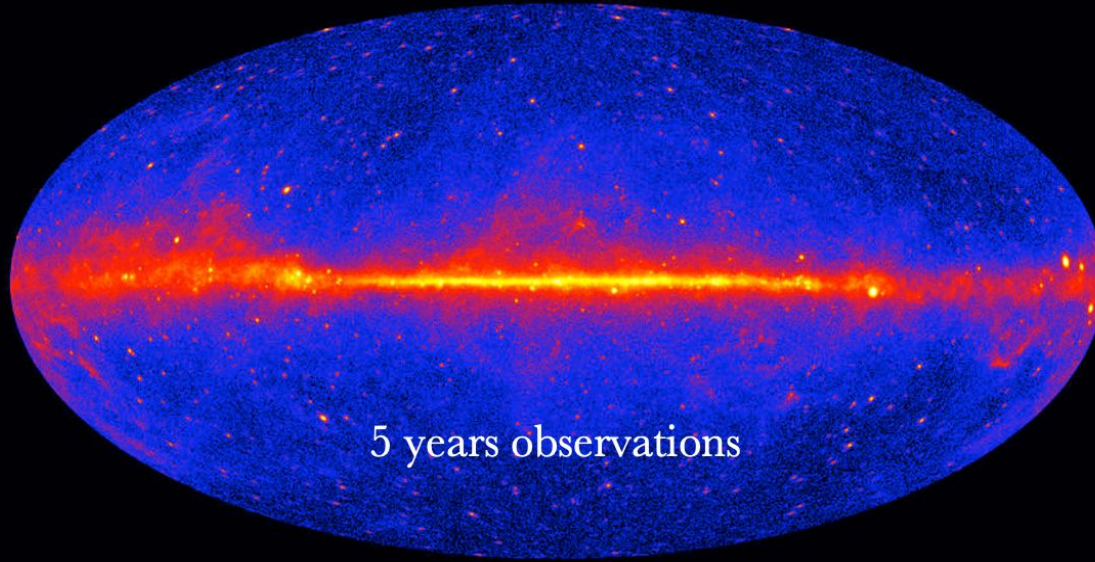
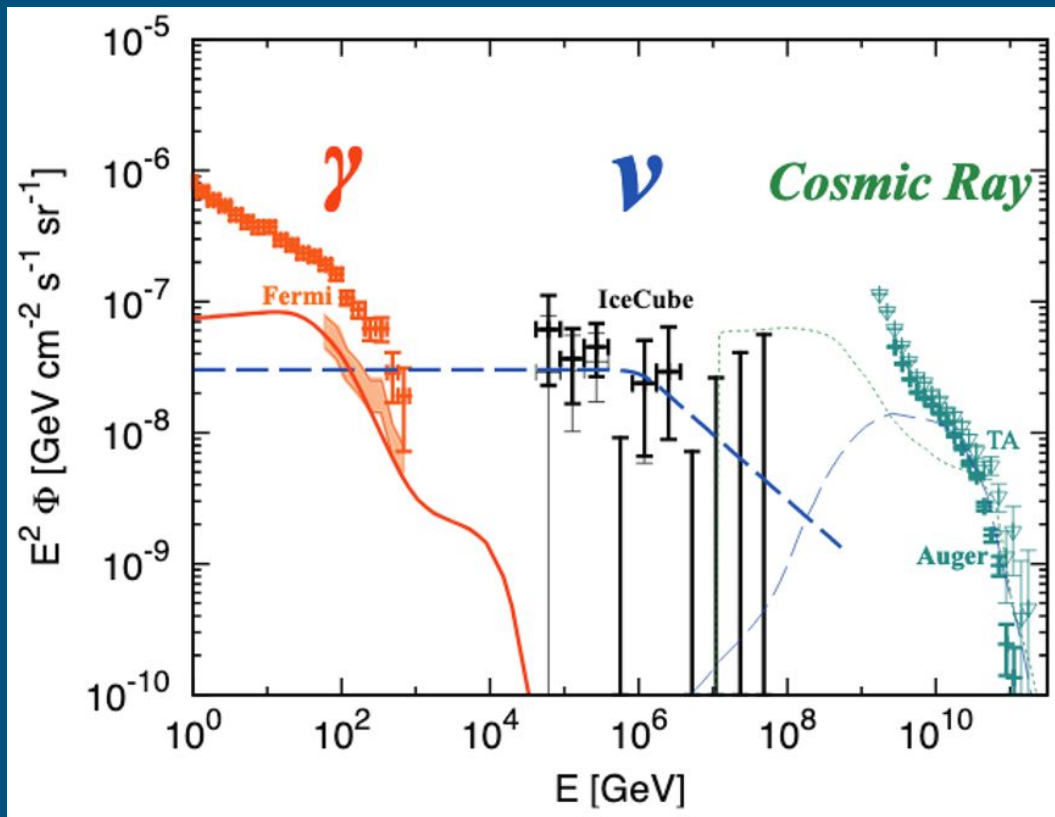


Spectrum of the Isotropic Diffuse Gamma-ray Background

**Meenakshi Rajagopal, Markus Ackermann,
Marco Ajello**

Gamma-ray sky as seen by the Fermi satellite, $E > 1$ GeV



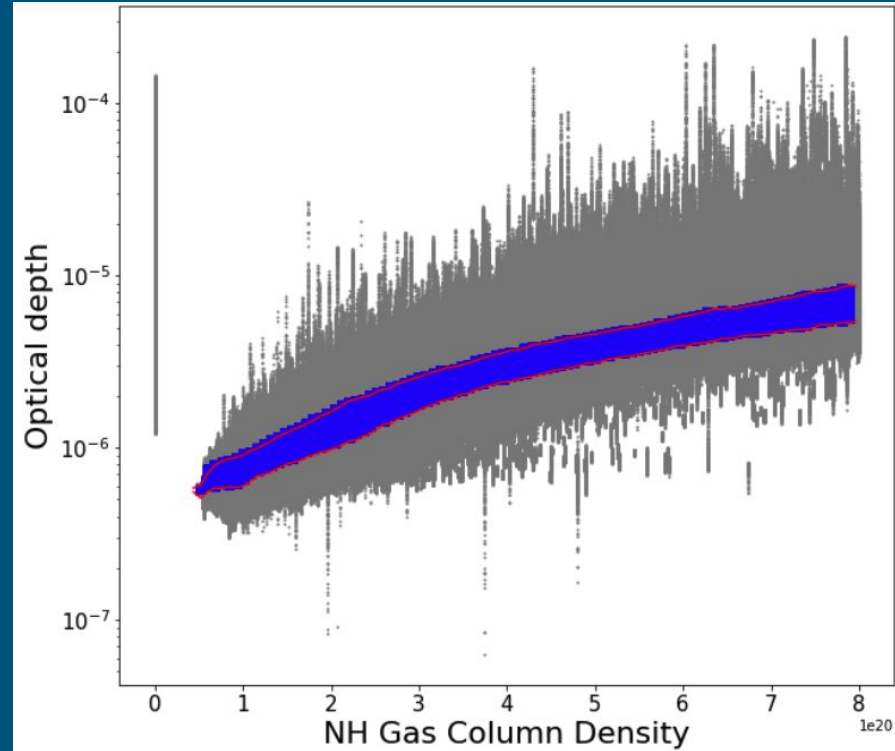
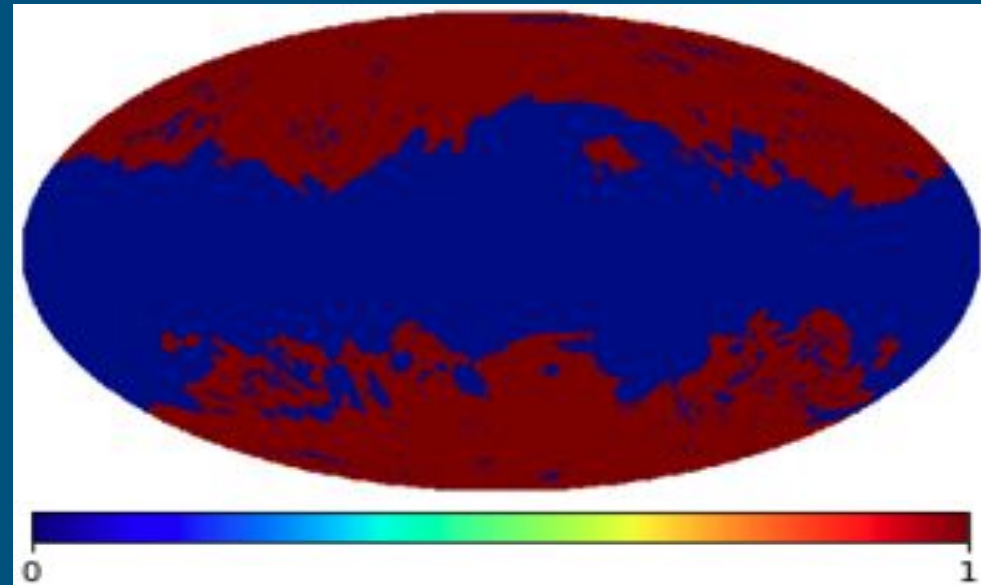


1. UHECRs: Ultra High-Energy Cosmic Rays, CR with $E > 5 \times 10^{18}$ eV
2. Astrophysical neutrinos: $10^{14} - 10^{15}$ eV
3. Diffuse gamma-ray flux: $10^9 - 10^{12}$ eV

Improvements

- Longer dataset from Fermi-LAT: 8 years (Pass8 data)
- Improved modeling and fitting techniques to reduce large systematic uncertainties by masking.
- Wider energy coverage : 50 MeV onwards

Example Mask: Dark Gas; excess component of the ISM which cannot be fully traced by the usual HI 21 cm or CO 2.6 mm transitions.



Modeled and fitted spectra for gamma-ray emission from dominant Galactic foreground templates, IC and local gas. Original spectrum is shown in dashed lines.

