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## Interpreting the Galactic diffuse emission from GeV to PeV

*Friday, 21 March 2025 15:00 (20 minutes)*

The Galactic diffuse emission (GDE) contains the whole information about the bulk of Galactic cosmic rays which are injected into the ISM and then propagate through the disk. The detection of interstellar emission directly tells us about the spatial and spectral distribution of the cosmic rays far from Earth. The comparison of the emission derived from gamma-ray observations with the emission deduced from locally measured cosmic rays can clarify whether we live in a special place in terms of cosmic rays. The GDE however is contaminated with the emission of the numerous unresolved sources that populate the Disk and are too faint to be individually detected. At the same time, the uncertainties related to the nuclear cross section limit the precision of the predictions derived from local cosmic-ray measurements.

I will discuss how all these factors should be accounted for when evaluating the results from the GDE, and discuss new regions for analysis of GeV and PeV GDE. I will stress on the role of molecular clouds, in reducing the uncertainties related to unresolved sources and their detectability from GeV to PeV.

### Summary

**Presenter:** PERON, Giada

**Session Classification:** Friday Afternoon A