

Contribution ID: 106

Type: not specified

Correlation Analysis of H.E.S.S. gamma-ray and Southern Galactic Plane Survey neutral atomic hydrogen maps

Tuesday 9 September 2025 13:40 (20 minutes)

This work focuses on developing automated methods for identifying correlations between two-dimensional gamma-ray maps obtained with the H.E.S.S. telescope array and three-dimensional neutral atomic hydrogen maps from the Southern Galactic Plane Survey. Detecting such correlations is important for studying the interaction of cosmic rays with the interstellar medium and for constraining the mechanisms responsible for the hadronic production of TeV gamma radiation. Pearson's correlation coefficient was applied as the primary analysis tool. This made it possible to identify velocity slices with higher levels of statistical correspondence. The developed methods help to speed up data processing and reduce the impact of subjective factors.

Primary author: PASTOVEN, Olena

Presenter: PASTOVEN, Olena