

VERITAS Dark Matter search in dwarf Spheroidal galaxies: an extended analysis

- Executive summary -

We tried to find/constrain Dark Matter (DM) properties by analysing VERITAS dwarf Spheroidal Galaxies (dSphs) data and including dSph angular extension information as well.

We evaluated the effectiveness of adding spatial information into the likelihood, compared to the conventional spectral analysis.

We performed an unbinned maximum likelihood estimation (MLE), taking into account both energy and angular extension dependency in observed events and DM spectra.

We found that the suggested method would be more sensitive to detect a possible DM signal, and the analysis with an extended source region would lead to improvement in finding and constraining DM properties.