

## **Indirect Dark-Matter Searches in VHE Gamma Rays with Legacy VERITAS Dwarf Spheroidal Observations**

In the current cosmological theory, the existence and contribution of dark matter (DM) is inevitable. The weakly interacting massive particle (WIMP), expected mass in the range of tens of GeV to tens of TeV, is a DM candidate which can annihilate and/or decay into secondary particles, sequentially producing very-high-energy gamma rays (VHE; above 100 GeV). The Very Energetic Radiation Imaging Telescope Array System (VERITAS; sensitive to 100 GeV to 30 TeV gamma rays) is a ground-based VHE telescope array and can look for or detect gamma-ray signatures resulting from the annihilation of WIMPs. Since dwarf spheroidal galaxies (dSphs) are DM-rich regions, they are one of the best targets for studying indirect DM annihilation signatures. Compared to the previous DM search in dSphs (VERITAS collab., 2017), we significantly extend the observational dataset and improve our method of constraining the WIMP annihilation cross section by considering the dSph angular extension.

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