

# Improved upper limits on the WIMP annihilation cross section from dwarf spheroidal satellite galaxy observations with the MAGIC telescopes

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The Major Atmospheric Gamma Imaging Cherenkov (MAGIC) telescopes, located on the Canary Island of La Palma, play an important role in the detection of VHE gamma rays resulting from the annihilation or decay of WIMP dark matter. Dwarf spheroidal satellite galaxies (dSphs) are among the best candidates to search for DM, having the highest known mass-to-light (M/L) ratios and being free of gamma-ray emitting sources in the foreground. In 2011, the MAGIC collaboration started a program on DM indirect detection in dSphs. The observations presented no hint of signals, implying strong upper limits on the velocity-averaged cross section of WIMP annihilation from the observations of Segue 1 and Ursa Major II dSphs. To avoid a possible bias on the target selection, to improve the previous results, and to reduce their associated systematic uncertainties, a diversification of the observation strategy has been carried out over the past years through a multi-year dSphs observation campaign. We present here new MAGIC results obtained from 60h of observation of the Draco dSph in 2018 and 50h of the Coma Berenices dSph in 2019. Since no signal has been detected from these targets, the individual limits and their combination with the previous results, using a total of 380 hours of good quality data, will be shown.

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