

Search for Gamma-ray Line emission from Dark Matter annihilation in the Galactic Centre with the MAGIC telescopes

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We present a search for dark matter (DM) spectral lines in the Galactic centre (GC) region with the MAGIC telescopes. MAGIC is a stereoscopic system of Atmospheric Cherenkov telescopes, located on the Canary island of La Palma (Spain) and sensitive to gamma rays in the energy range from 50 GeV to 50 TeV. Observations at high zenith angles significantly increase the telescopes' collection area and sensitivity for gamma rays in the TeV regime. We discuss how we exploit the data from a complex sky region to search for a line-like DM signature and derive constraints on line emission from more than 200 hours of MAGIC high-zenith angle observations of the GC region. Our analysis allows us to derive competitive limits to the DM annihilation cross-section in the TeV range and to exclude a previously unconstrained range of heavy SUSY models.

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Dark matter

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