

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

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We present the first search for dark matter (DM) spectral lines in the Galactic centre (GC) region with the MAGIC telescopes. The MAGIC telescopes, located on the Canary island of La Palma (Spain), are sensitive to gamma rays in the energy range from 50 GeV to 50 TeV. MAGIC has performed indirect DM searches with various astrophysical targets, such as dwarf spheroidal galaxies and clusters of galaxies. Observations at high-zenith angles significantly increase the telescopes' collection area and sensitivity for gamma rays in the TeV regime. We present the results obtained with more than 200 hours of high-zenith angle observations of the GC region with MAGIC, which allow us to probe promising heavy SUSY models, and to obtain competitive limits to the DM annihilation cross-section at high DM particle mass, compared to existing constraints (e.g.  $\langle\sigma v\rangle < \sim 2.0 \times 10^{-27} \text{ cm}^3\text{s}^{-1}$  for a DM mass of 3 TeV). We will discuss how we exploit the data from a complex sky region to search for a line-like DM signature.

## Keywords

Dark Matter, Gamma-ray, IACT, TeV, Indirect dark matter search, the Galactic Centre

## Collaboration

MAGIC

## other Collaboration

## Subcategory

Experimental Results

**Primary author:** Dr INADA, Tomohiro (ICRR, UTokyo)

**Co-authors:** Dr KERSZBERG, Daniel (IFAE); Dr HÜTTEN, Moritz (Max Planck Institute for Physics, Munich); Prof. TESHIMA, Masahiro (ICRR, UTokyo/Max-Planck-Institute for Physics, Munich); Dr RICO, Javier (IFAE-BIST); Dr NINCI, Daniele; FOR THE MAGIC COLLABORATION

**Presenter:** Dr INADA, Tomohiro (ICRR, UTokyo)

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