Executive Summary – Search for dark matter signals with the H.E.S.S. Inner Galaxy Survey

The presence of dark matter is suggested by a wealth of astrophysical and cosmological measurements, however its underlying nature is yet unknown.

Among the most promising candidates for dark matter particles are WIMPs, which self-annihilation would produce Standard Model particles including gamma-rays, which can be detected by H.E.S.S..

The centre of the Milky Way is predicted as the brightest source of dark matter annihilations. We present here the first results of a new search for dark matter annihilation signals from the Galactic Centre region with the unprecedented dataset of very-high-energy observations taken with the Inner Galaxy Survey.

We found no significant excess and we therefore derived strong constraints on the velocity-weighted annihilation cross section. We compared these constraints to other experimental results.