

## The Galactic Center as seen by the Southern Wide field-of-view Gamma-ray Observatory

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The Galactic Centre (GC) is a complex region with several sources emitting very-high and ultra-high energy photons. It is also a unique place for Dark Matter (DM) searches under the assumption of cuspi profile in the WIMP theory. The Southern Wide field-of-view Gamma-ray Observatory (SWG0) is currently under development aiming to observe the GC region among other interesting regions in the southern hemisphere. We present the expected GC gamma-ray emission as will be seen by SWGO, and its sensitivity to WIMP DM annihilation. The simulations use the updated instrument response functions (IRFs). We study the performance of the different array and detector configuration which is very important in the design phase of the observatory.

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