# Publications

## Conference Proceedings

- *Prospects of Axion-like Particles searches with the Southern Wide-field Gamma-ray Observatory (SWGO)* , J. Serna-Franco, A. Pratts, R.J. Alfaro (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/526/
- *Prospects for the detection of Dark Matter with Long-lived Mediators in the Sun using the Southern Wide-field Gamma-ray Observatory* , M. Andrade, J. Fagiani, C. Siqueira, A. Viana, V.D. Souza (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/464/
- *Event Reconstruction Performance for SWGO using Attention-based Neural Network* , I. Watson, Y. Son (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/878/
- *Towards a configuration for the Southern Wide-field Gamma-ray Observatory (SWGO) outer array* , L. Valore (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/871/
- *Deep Learning Methods for Gamma/Hadron Separation in SWGO* , M. Schneider, M. Pirke, F. Leitl, J. Glombitza, C. van Eldik (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/836/
- *Characterization of Extended Gamma-Ray Sources with SWGO: Morphological Models and Detection Techniques* , E.A. Rangel Anita, J.S. Franco, M.M. Gonzalez (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/817/
- *Prospects for Galactic Science with SWGO* , A. Mitchell, E.O. Anguner (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/763/
- *Gamma-ray identification with Sb* , A.G. Mariazzi, P.M. Hansen, D. Melo, L. Nellen, I.D. Vergara Quispe (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/748/
- *The Simulation for the Next-Generation Ultra-High Energy Air Shower Lake Array for SWGO* , T. Li, R. Torres-Escobedo, S. Hernández-Cadena, H. Zhou (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/729/
- *A proposal for a multiPMT detector in the Southern Wide Field Gamma-Ray Observatory (SWGO)* , L. Lavitola (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/720/
- *SWGO: A Next-generation Ground-based Survey Instrument for Gamma-ray Astronomy* , P. Huentemeyer (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/686/
- *A Pathfinder for the Southern Wide Field Gamma-Ray Observatory (SWGO)* , J. Hinton (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/676/
- *The Inner Baseline Array Design of the Southern Wide-field Gamma-ray Observatory (SWGO)* , H. Goksu (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/669/
- *Finalizing the Design of the Southern Wide-field Gamma-ray Observatory* , J. Glombitza (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/661/
- *Expected performances of the SWGO observatory to ultra high energy gamma-ray* , A. Chiavassa, A. Negro (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/607/
- *Study of potential the observables for Gamma/Hadron separation in the SWGO observatory* , T. Capistrán (on behalf of the SWGO collaboration), Proceedings of ICRC 2025,

https://pos.sissa.it/501/593/
- *Evaluation and comparison of trigger strategies for the SWGO* , J. Bennemann (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/571/
- *Development of a Hodoscope for Testing and Characterization of WCD Detectors for SWGO* , L.M. Domingues Mendes, U. Barres de Almeida, G. Ferreira Franco, L.A. Stuani Pereira (on behalf of the SWGO collaboration), Proceedings of ICRC 2025, https://pos.sissa.it/501/563/
- *Status of the Southern Wide-field Gamma-ray Observatory* , H. Goksu (on behalf of the SWGO collaboration), Proceedings of RICH 2025, https://doi.org/10.1016/j.nima.2026.171304
- *Exploring the high-energy universe with a novel photodetector configuration* , J. Stewart, Proceedings of VCI 2025, https://www.sciencedirect.com/science/article/pii/S0168900225006448
- *SWGO: a Southern Hemisphere wide field of view observatory* , A. Chiavassa (on behalf of the SWGO collaboration), Proceedings of CRIS MAC 2024, https://iopscience.iop.org/article/10.1088/1742-6596/3053/1/012017
- *The Detector Design of the Southern Wide-Field Gamma-Ray Observatory* , R. W. Springer (on behalf of the SWGO collaboration), Proceedings of CRIS MAC 2024, https://iopscience.iop.org/article/10.1088/1742-6596/3053/1/012028
- *A multiPMT for SWGO water Cherenkov detectors* , M. Waqas (on behalf of the SWGO collaboration), Proceedings of CRIS MAC 2024, https://iopscience.iop.org/article/10.1088/1742-6596/3053/1/012033
- *Sensitivity to keV-MeV dark matter from cosmic-ray scattering with current and the upcoming ground-based arrays CTA and SWGO* , I. Reis (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/1408/
- *Beyond the Standard Model with SWGO* , P. Harding (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/1399/
- *The Southern Wide-field Gamma-ray Observatory* , R. Conceição (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/963/
- *Sb for gamma/hadron separation in SWGO* , L. Nellen (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/952/
- *Wavelength-shifting light traps for SWGO and other applications* , P. Abreu et al. (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/926/
- *Detector Development for the Southern Wide-field Gamma-ray Observatory (SWGO)* , L. Nellen (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/880/
- *Manufacture Details of a SWGO Double-Layer Tank Design - Water Cherenkov Detector Prototype* , P. Abreu et al. (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/803/
- *An update on site search activities for SWGO* , P. Abreu et al. (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/752/
- *Updates on the Lake Design for SWGO* , H. Goksu (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/653/
- *Low-cost Oceanographic Buoy for Evaluating the Mechanical Resistance of a Water Cherenkov Detector to be deployed on a high-altitude Natural Lake in Peru* , S.D. Quispe Mamani (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/614/
- *The Mercedes water Cherenkov detector: a multi-PMT shallow tank design proposal for ground-based gamma-ray observatories* , U. Barress de Almeida (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/601/
- *Status of the SWGO air shower reconstruction using a template-based likelihood method* , P. Abreu et al. (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/593/
- *Estimating the potential of SWGO to measure the composition-dependent behaviour of the CR anisotropy* , P. Abreu et al. (on behalf of the SWGO collaboration), Proceedings of ICRC 2023,

https://pos.sissa.it/444/486/
- *SWGO site environment characterisation activities* , L. Chytka (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/313/
- *Dark Matter searches in Dwarf Galaxies with the Southern Wide-field Gamma-ray Observatory* , M. Andrade (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/1413
- *Simulation of PeV atmospheric showers for SWGO* , F. Bisconti (on behalf of the SWGO collaboration), Proceedings of ICRC 2023, https://pos.sissa.it/444/273/
- *The Southern Wide-field Gamma-ray Observatory: Status and Prospects* , J. A. Hinton (on behalf of the SWGO collaboration), Proceedings of ICRC 2021, https://ui.adsabs.harvard.edu/abs/2021arXiv211113158H/abstract
- *The Southern Wide-Field Gamma-ray Observatory (SWGO)*, Proceedings of IWARA 2020 Virtual Conference, Ulisses Barres de Almeida (for the SWGO Collaboration), https://arxiv.org/abs/2012.13740
- *A next-generation ground-based wide field-of-view gamma-ray observatory in the southern hemisphere*, H. Schoorlemmer (on behalf of the SWGO collaboration), Proceedings of ICRC 2019, PoS(ICRC2019)785

# Related publications

## White papers

- *Science Prospects for the Southern Wide-field Gamma-ray Observatory: SWGO*, SWGO collaboration, 2025, https://ui.adsabs.harvard.edu/abs/2025arXiv250601786S/abstract
- *Science Case for a Wide Field-of-View Very-High-Energy Gamma-Ray Observatory in the Southern Hemisphere*, SGSO Alliance, arXiv:1902.08429

## SWGO-related papers (Cat2)

- Andrea Chiavassa, Andrea Negro, Nuclear Inst. and Methods in Physics Research, A, Volume 1093, id.171921 (2026), *A parametrized simulation code to simulate the response of ground detector arrays to Extensive Air Showers above 100 TeV* , https://ui.adsabs.harvard.edu/abs/2027NIMPA109371921C/abstract
- Markus Pirke, Youngwan Son, Jonas Glombitza, Martin Schneider, Ian James Watson and Christopher van Eldik, JCAP 2026, 2026, Issue 09, id.144, *Enhancing event reconstruction for γ-ray particle detector arrays using transformers* , https://ui.adsabs.harvard.edu/abs/2026JCAP...09..144P/abstract
- Micael Andrade, Juan Fagiani, Clarissa Siqueira, Vitor de Souza and Aion Viana, JCAP 2025 Issue 01, id.012, *Prospects for the detection of dark matter with long-lived mediators in the Sun using the Southern Wide-field Gamma-ray Observatory* , https://ui.adsabs.harvard.edu/abs/2025JCAP...01..012A/abstract
- J. Glombitza, M. Schneider, F. Leitl, S. Funk and C. van Eldik, JCAP 2025 Issue 02, id.066, *Application of graph networks to a wide-field water-Cherenkov-based Gamma-ray Observatory* , https://ui.adsabs.harvard.edu/abs/2025JCAP...02..066G/abstract
- Hazal Goksu, Werner Hofmann, Felix Werner, Fabian Haist, Jim Hinton, Nuclear Inst. and Methods in Physics Research, A, 1076, id.170450 (2025), *Instrumenting a lake as a wide-field gamma-ray detector* , https://ui.adsabs.harvard.edu/abs/2025NIMPA107670450G/abstract

- Kunwar, Samridha et al., Nuclear Inst. and Methods in Physics Research, A, 1050, id. 168138 (2023), *A double-layered Water Cherenkov Detector array for Gamma-ray astronomy* , https://ui.adsabs.harvard.edu/abs/2023NIMPA105068138K/abstract
- F. Bisconti and A. Chiavassa, Journal of Instrumentation, 18, Issue 07, id.T07003 (2023), *Performance comparison of water Cherenkov detectors with different geometries*, https://ui.adsabs.harvard.edu/abs/2023JInst..1807003B/abstract
- G. La Mura et al., MNRAS 508, Issue 1, pp.671-679 (2021) , *Gamma-ray burst detection prospects for next generation ground-based VHE facilities* , https://ui.adsabs.harvard.edu/abs/2021MNRAS.508..671L/abstract
- G. La Mura et al., Galaxies 9, 4, id.98 (2021), , https://ui.adsabs.harvard.edu/abs/2021Galax...9...98L/abstract
- R. López-Coto, M. Doro, A. de Angelis, M. Mariotti and J.P. Harding, JCAP 2021, Issue 08, id.040, *Prospects for the Observation of Primordial Black Hole evaporation with the Southern Wide Field of View Gamma-ray Observatory*, https://ui.adsabs.harvard.edu/abs/2021JCAP...08..040L/abstract

## Papers with mention to SWGO (Cat3)

- C. Alispach et al, Astroparticle Physics 182 (2026) 103274, *Prospects for the detection of gamma rays using Cherenkov telescopes enhanced by a ground array observatory* , https://ui.adsabs.harvard.edu/abs/2025JInst..20T4008L/abstract
- D. Luzquiños, A. Colán and J. Bazo, Journal of Instrumentation, 20, Issue 04, id.T04008 (2025), *Gamma/hadron separation using the arrival time distribution of particle cascades at TeV energies for SWGO* , https://ui.adsabs.harvard.edu/abs/2025JInst..20T4008L/abstract
- N. Scharrer, S.T. Spencer, V. Joshi and A.M.W. Mitchell, JCAP 2025, Issue 05, id.096, *Detectability of Supernova remnants with the Southern Wide-field Gamma-ray Observatory*, https://ui.adsabs.harvard.edu/abs/2025JCAP...05..096S/abstract
- Anguner, Ekrem Oguzhan, Ergin, Tulun, Astroparticle Physics, 158, article id. 102936 (2024), *The expected potential of hadronic PeVatron searches with spectral γ-ray data from the Southern Wide-field Gamma-ray Observatory* , https://ui.adsabs.harvard.edu/abs/2024APh...15802936A/abstract
- Guilherme N. Fortes, Farinaldo S. Queiroz, Clarissa Siqueira and Aion Viana, JCAP 2023, Issue 07, id.043, *Present and future constraints on secluded dark matter in the Galactic Halo with TeV Gamma-ray observatories* , https://ui.adsabs.harvard.edu/abs/2023JCAP...07..043F/abstract
- P. Assis et al., Eur. Phys. Journal C, 82, 10, id.899 (2022) *The Mercedes water Cherenkov detector* , https://ui.adsabs.harvard.edu/abs/2022EPJC...82..899A/abstract
- Elena Orlando and Andrew Strong, 2021. *StellarICS: inverse Compton emission from the quiet Sun and stars from keV to TeV* , https://ui.adsabs.harvard.edu/abs/2021JCAP...04..004O/abstract
- G. La Mura et al. MNRAS 497 (2020) 3, *Detection of VHE gamma-ray transients with monitoring facilities*, https://arxiv.org/abs/2001.04503
- Aion Viana et al. 2019. *Searching for Dark Matter in the Galactic Halo with a Wide Field of View TeV Gamma-ray Observatory in the Southern Hemisphere* , https://arxiv.org/abs/1906.03353

## Contributions to the ASTRO2020 decadal survey

### Instrument

- *The Southern Wide-Field Gamma-Ray Observatory (SWGO): A Next-Generation Ground-Based Survey Instrument for VHE Gamma-Ray Astronomy*. Petra Huentemeyer *et al*., arXiv:1907.07737

### Science cases

- *All-Sky time domain astrophysics with Very High Energy Gamma raysmisphere,* K. Satalecka + F. Schüssler et al., DecadalSurveyASTRO2020_TransientsSGSO.pdf
- *Searching for Sources of TeV Particle Dark Matter in the Southern Hemisphere*, A. Albert et al., DecadalSurveyASTRO2020_DM_Sources.pdf
- *Pulsars in a Bubble? Following Electron Diffusion in the Galaxy with TeV Gamma Rays,* H. Fleischhack et al., Link to submitted version, Arxiv link
- Surveying TeV Gamma-ray Emission from Active Galactic Nuclei, Fraija et al., DecadalSurveyASTRO2020_AGNSGSO.pdf
- Cosmic Rays in the TeV to PeV Primary Energy Range, Fraija et al., DecadalSurveyASTRO2020_CRSGSO.pdf
- The GeV–TeV Sun: A New Laboratory for Astroparticle Physics, M. U. Nisa et al. :sun_2020.pdf

## General considerations

- *Characteristics of extensive air showers around the energy threshold for ground-particle-based γ-ray observatories*, H. Schoorlemmer, J.A. Hinton, R. López-Coto. Eur. Phys. J. C (2019) 79: 427. doi:https://doi.org/10.1140/epjc/s10052-019-6942-x
- *Baseline Design for a Next Generation Wide-Field-of-View Very-High-Energy Gamma Ray Observatory*, H. Schoorlemmer, R. Lopez-Coto and J. Hinton,PoS(ICRC2017)819
- *On the scientific motivation for a wide field-of-view TeV gamma-ray observatory in the Southern Hemisphere*, M. Mostafa, S. BenZvi, H. Schoorlemmer, F. Schüssler on behalf of the HAWC Collaboration,PoS(ICRC2017)851

## Detector Design and Prototyping

- *A double-layered Water Cherenkov Detector array for Gamma-ray astronomy*, S. Kunwar et al. NIM A 1050, 168138 (2023)
- *Design and expected performance of a novel hybrid detector for very-high-energy gamma-ray astrophysics*, P. Assis, U. Barres de Almeida, A. Blanco, R. Conceição, B. D'Ettorre Piazzoli, A. De Angelis, M. Doro, P. Fonte, L. Lopes, G. Matthiae, M. Pimenta, R. Shellard, B. Tomé, https://www.sciencedirect.com/science/article/pii/S0927650518300586?via%3Dihub
- *Design of the LHAASO detectors,* Huihai He for the LHAASO Collaboration, https://link.springer.com/article/10.1007/s41605-018-0037-3
- *The overview of the ALPACA Experiment*, M. Ohnishi,PoS(ICRC2017)827
- *Simulation study for the proposed wide field-of-view gamma-ray detector array ALTO*, S. Thoudam, Y. Becherini and M. Punch,PoS(ICRC2017)780

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