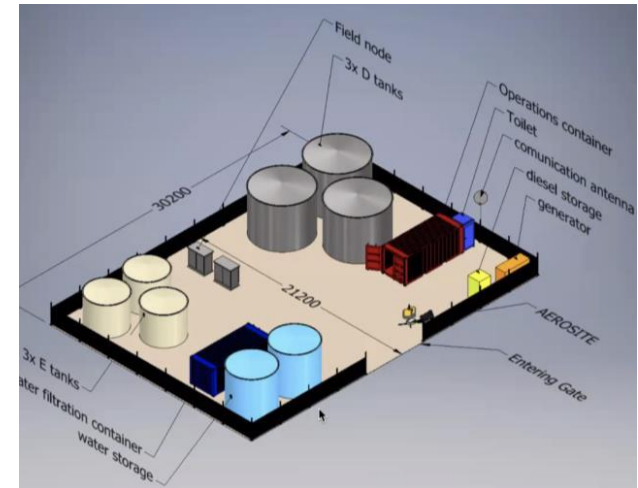


Southern Wide-field Gamma-ray Observatory

2026/27, the years of Path finder/ engineering array

One Mercedes single-layer rotomolded WCD already in San Pedro de Atacama, one similar but with isolation ready to be sent to Chile.

Reasonable probability to have funding, from Brazil, to built an engineering array with about 150 Mercedes WCDs.



In parallel time and opportunity to:

- detector R&D (sealed RPCs ; optimization WCD shape; thermal isolation)
- development of new and innovative reconstruction methods (g/h ; energy and angular resolution; muon contents)
- Phenomenological studies: hadronic interaction models; ...
- Outreach

Next week@ Lisbon: SWGO general meeting

SWOT Analysis

Strengths

The group has **strong expertise** in cosmic-ray physics, air-shower phenomenology, detector development, simulations, and data analysis, enabling contributions across the full SWGO programme. This is reinforced by close collaborations with leading groups in **Brazil, the Czech Republic, Italy, and Spain**.

Weaknesses

The group has **not yet reached full operational capacity**, limiting its ability to contribute simultaneously to detector construction and to advanced phenomenological studies, despite having strong qualifications in both areas. Balancing hardware, analysis, and training efforts remains challenging.

Opportunities

SWGO offers a **unique opportunity** through its wide energy coverage (100 GeV–tens of PeV) and rich science case, from multi-messenger astrophysics to PeVatron searches. As the only wide-field gamma-ray observatory in the Southern Hemisphere, it enables leadership across design, operation, and data analysis.

Threats

The ambitious scale of SWGO requires sustained **financial and human resources**. Securing them remains challenging, particularly given **Lisbon's housing crisis and the sharp reduction in PhD grants**, which increasingly hinder the attraction and retention of PhD students and early-career researchers.