

# The search for high altitude sites in South America for the SWGO detector - Executive Summary for the ICRC 2021

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## **1. Executive Summary**

### **What is this contribution about?**

The poster illustrates the activities related to the site search for a future project named SWGO (Southern hemisphere Wide-Field Gamma-ray Observatory). SWGO is an atmospheric shower particle detector to be sensitive in the GeV-TeV range. As such altitudes above 4,400 m asl are required. Furthermore, there is no such detector in the Southern Hemisphere, while there are two alike instruments in the Northern Hemisphere: HAWC and LHAASO. From the Southern Hemisphere there are great expectations to observe cosmic ray signatures in the Galactic Center and plane in the TeV-PeV range.

### **Why is it relevant / interesting?**

The instrument will become a reference instrument in South America for one or more decades. The scientific and technological prospects are of interests to South American countries and gamma-ray astronomers world-wide. The choice of the site is relevant in this scenario.

### **What have we done?**

We have chosen 8 candidate sites in 4 countries: Argentina, Bolivia, Chile, Peru with the basic requirements to be valid site for SWGO. Site characteristics such as: water availability, flatness, weather conditions, accessibility as well as power and network availability are being scrutinized. The aim is to have a short list by the end of the year.

### **What is the result?**

As a result we will pave the way for a new detector in South America that would open the PeV cosmic ray window toward the galactic center offering data to all interested scientist. The choice of the right location is fundamental for the success of the endeavour.