

The SWGO experiment: a wide field of view gamma ray observatory in the Southern hemisphere

The recent LHAASO and HAWES results opened the way to the search of gamma ray sources emitting at energies above 100 TeV, both detectors are in the northern hemisphere; the need for such an observatory in the southern hemisphere is therefore clear. The goal of the SWGO collaboration is the construction of a wide field of view, high duty cycle observatory to explore the Southern hemisphere sky searching for gamma ray sources at energies above 100 GeV. Such an array must detect extensive air showers particles and must be able to select the photon originated showers from the background of the hadronic ones. The experiment must be located in a site at latitude between 10 and 30 degrees south and at an altitude above 4400 m a.s.l.. The baseline detection technique chosen by the collaboration is Water Cherenkov Detectors, the array will have a central region with high fill factor ($>60\%$) and a large (about 1 km^2 square) outer region with a much lower fill factor (around 4-5%). In this communication I will provide an overview of the goals and current status of the project.