



Contribution ID: 180

Type: Parallel Talk

Southern Wide-field Gamma-ray Observatory (SWGGO)

Tuesday 9 August 2022 16:50 (20 minutes)

HAWC and LHAASO provided a new look at the gamma-ray sky. With high sensitivity through the use of the water-Cherenkov particle detection method, these instruments have been able to achieve unprecedented sensitivity and have detected gamma rays up to 1 PeV. Their wide fields and continuous operation make them highly complementary to CTA and other IACTs. The Southern Wide-field Gamma-ray Observatory (SWGGO) collaboration is a project under development to build a next-generation water-Cherenkov gamma-ray instrument in the southern hemisphere to expand wide-field coverage to the southern sky, the location of the central region of our galaxy. SWGGO aims to be both higher and larger than HAWC and LHAASO and is re-examining the detector design to develop an optimal combination of background rejection and angular resolution. I will summarize the design and optimization process and present information on our prototype detector designs, with emphasis on how we can extend the sensitivity. Additionally, I will provide an overview of the goals and current status of this project.

Collaboration name

SWGGO Collaboration

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