

Lake Deployment of Southern Wide-field Gamma-ray Observatory (SWGGO) Detector Units

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Southern Wide-field Gamma-ray Observatory (SWGGO) will be a next-generation high altitude gamma-ray survey observatory in the southern hemisphere consisting of an array of water cherenkov detectors. With its energy range, wide field of view, large duty cycle, and location it will complement the other existing and planned gamma-ray observatories. In this contribution, we will describe the lake concept for SWGGO, an alternative to the HAWC-like separate detector unit design, and the LHAASO-style artificial ponds. In the lake concept, instead of having tanks filled with water, bladders filled with clean water are deployed near the surface of a natural lake, where each bladder is a light-tight stand-alone unit containing one or more photosensors. We will give an overview of the advantages and challenges of this design concept and describe the first results obtained from prototyping.

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Subcategory

Experimental Methods & Instrumentation

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