

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

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This contribution is about the Lake design for the Southern Wide-field Gamma-ray Observatory (SWGO), which will be a next-generation high altitude gamma-ray survey observatory in the southern hemisphere consisting of an array of water cherenkov detectors. The lake design, as an alternative to a HAWC-like design with individual water tanks and a LHAASO-style design with artificial ponds, consists of bladders that are filled with clean water are deployed near the surface of a natural lake. Each bladder is a light-tight stand-alone unit containing one or more photosensors. At the Max-Planck-Institut fur Kernphysik (MPIK), the first prototype bladders were made and are being tested with a 7 meter high and 10 m wide lake simulation tank. In parallel, various tests for materials to be used for the detectors and simulation studies are underway. The results from the initial prototype tests show the lake design as a promising alternative for SWGO detector units.

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