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SWGO: The Southern hemisphere Wide-field Gamma-ray Observatory

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SWGO is an international proposal for the construction of a wide-field observatory to explore the Southern Hemisphere sky in the energy range from a few hundred GeV to the PeV. It aims to open a new observational window in astronomy by being the first wide-field ground-based gamma-ray instrument to survey the austral sky in the very- to ultra-high-energy range, where observational coverage is currently limited to the northern sky thanks to HAWC and LHAASO. SWGO is to be installed in the Andes, in South America, at an altitude superior to 4400 m a.s.l., and will be based on an array of water-Cherenkov detector (WCD) units deployed over a planned extension of 1 km2, arranged as a dense fill-factor core of circa 80,000 m2 surrounded by a sparse outer array. In this presentation we will provide an overview of the status and future plans for the instrument, as well as its science perspectives and goals.

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