

The Southern Wide Field Gamma Ray Observatory (SWGGO)

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The scientific potential of a wide field of view, and very high duty cycle, ground based gamma ray detector has been demonstrated by the current generation of instruments, such as HAWC and ARGO, and will be further extended in the Northern hemisphere by LHAASO. Nevertheless, no such instrument exists in the southern hemisphere yet, where a great potential lies uncovered for the mapping of Galactic large scale emission as well as providing access to the full sky for transient and variable multi-wavelength and multi-messenger phenomena. Access to the Galactic Centre and complementarity with the CTA-South are other key motivations for such a gamma ray observatory in the south. There is also significant potential for cosmic ray studies, including investigation of cosmic ray anisotropy. In this talk I will present the concept for the future Southern Wide-Field Gamma-ray Observatory (SWGGO), now formally established as an international Consortium (www.swgo.org) and starting its R&D phase, as well as its scientific perspectives.

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