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A Project to Install Water-Cherenkov Detectors in the Antarctic Peninsula as part of the LAGO Detection Network

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The Latin American Giant Observatory (LAGO) consist in a network of water-Cherenkov detectors (WCD) located in nine countries of Latin America, to study with extreme detail the flux of cosmic rays (CRs) from ground level. The main scientific aims are oriented to address several problems of astrophysics, space physics and atmospheric physics. In particular, LAGO has started to develop an extensive Space Weather program. Due to the geomagnetic shielding, particle detectors located at high latitudes allow the observation of CRs with lower energies than those located at middle or low latitudes. Antarctica is therefor a privileged place to study CRs, allowing access to the lowest energies that can be observed from ground. A project to install WCDs in the Argentinean Marambio station, located at the Antarctic Peninsula, aims at operating a first antarctic node of LAGO. In this work, several aspects of the project, including information about the site, the detector, the building, and numerical simulations of the expected flux at this location will be presented. Results from this new LAGO site will provide important insight for Space Weather and the Sun-Earth coupling.

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