

# The Greenland Neutrino Observatory

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The goals of the proposed Greenland Neutrino Observatory (GNO) are to measure the flux of ultra-high energy neutrinos and use this particle beam for tests of fundamental physics at energy scales that cannot be easily achieved on the Earth. The GNO concept exploits the Askaryan effect and the radio-transparency of glacial ice, which together enable hundred-cubic-kilometer volumes of ice to be monitored with sparse instrumentation. GNO will consist of an array of radio antenna stations deployed near Summit Station in central Greenland, atop a 3 km deep ice sheet. Analysis of field measurements indicate a radio attenuation length of approximately 1000 m at 300 MHz in the upper 1.5 km of ice. We are currently investigating the logistics of operating at Summit Station, assembling a prototype station to be deployed in summer 2015, and are developing simulation tools to optimize the design and configuration of the antenna stations.

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