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Interferometric Reconstruction

Wednesday 19 March 2025 11:15 (20 minutes)

The Radio Neutrino Observatory in Greenland (RNO-G) is located at Summit Station and is designed to detect Askaryan emission from ultra-high energy (UHE) neutrinos above 100 PeV. The detector is made up of an array of antennas buried at a depth of 100 meters with the purpose of triggering on and reconstructing neutrino-like signals in the radio regime. Interferometry can be used to find the source of these radio signals as received by an array of antennas. This talk will outline how interferometric reconstruction works and a python-based implementation of the technique which is used by the RNO-G. This technique is broadly used in other neutrino detection experiments and radio astronomy as well.

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