

Direction reconstruction for the Radio Neutrino Observatory Greenland

Wednesday 14 July 2021 13:18 (12 minutes)

The Radio Neutrino Observatory Greenland (RNO-G) is planned to be the first large-scale implementation of the in-ice radio detection technique. It targets astrophysical as well as cosmogenic neutrinos with energies above 10 PeV. The deep component of a single RNO-G station consists of three strings with antennas to capture horizontal as well as vertical polarization. This contribution shows a model-based approach to reconstruct the direction of the neutrinos with an RNO-G station. The timing of the waveforms is used to reconstruct the vertex position and the shape and amplitude of the waveform are used to reconstruct the viewing angle as well as the polarization, which will add up to the zenith and azimuth direction of the neutrino. We present the achieved angular resolution and discuss implications for the science of RNO-G.

Keywords

direction reconstruction, radio, in-ice detection, RNO-G, neutrinos

Collaboration

other (fill field below)

other Collaboration

RNO-G

Subcategory

Experimental Methods & Instrumentation

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Session Classification: Discussion

Track Classification: Scientific Field: NU | Neutrinos & Muons