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# Energy reconstruction for the Radio Neutrino Observatory in Greenland

Astrophysical neutrinos in the energy range above 10PeV can deliver new insights into the origins and physics of ultra-high energy cosmic rays. Because of the low expected flux, to observe them, gigantic detectors with fiducial volumes of several cubic kilometers are necessary. Starting in the coming summer, the Radio Neutrino Observatory in Greenland (RNO-G) will overcome these challenges by detecting radio signals from the particle showers produced by high-energy neutrinos when they interact in the Greenland ice sheet. To cover the large volumes required, RNO-G detector stations are placed over 1km away from each other, so that a neutrino is likely only seen by a single station. Combined with the low signal-to-noise ratios expected for most events, this makes it challenging to infer the neutrino properties from the radio signals.

In this poster, we show the techniques we use to for event reconstruction, particularly how the neutrino energy can be determined from the amplitude, spectrum, and timing of the radio signal.

## Related session

Searching for neutrinos

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