

Executive Summary

“Sensitivity studies for the IceCube-Gen2 radio array”

What is this contribution about?

This contribution focuses on the simulations and sensitivity evaluation of the $\sim 500\text{km}^3$ -sized radio array planned as part of IceCube-Gen2, a next generation neutrino observatory at the South Pole. At the highest energies, the radio array aims at measuring the continuation of the astrophysical flux spectrum and at discovering cosmogenic neutrinos.

What is presented?

The simulation efforts of a complete radio array consisting of a combination of shallow log-periodic dipole antennas and deep vertically and horizontally polarized dipole antennas are presented. Its sensitivity to a diffuse flux of ultra-high energy neutrinos and to point sources is presented.

What is the result?

The studied array of ~ 300 stations covering an area of $\sim 500\text{km}^3$ is sensitive to measure the continuation of the measured diffuse astrophysical neutrino flux and to discover cosmogenic neutrinos. We argue that our choice of station spacing and the combination of deep and shallow detector components is able to achieve good resolution, redundancy and background rejection capability with a large effective volume.