

Brian Clark – HEP seminar – March 24, 2026
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Title: Experimental searches for ultra-high-energy neutrinos

Abstract: Ultra-high energy neutrinos (>100 PeV) are expected to be unique messengers to the distant universe. This is because the other classic UHE messengers--photons and cosmic rays--are attenuated for sources further away than ~ 100 Mpc. Additionally, as neutral and weakly interacting particles, neutrinos travel in straight lines, and so they point at their sources. However, the flux of UHE neutrinos is expected to be extremely low, requiring immense detectors approaching 100 km^2 in size. In this talk, I will discuss recent advances in the experimental effort to find this UHE flux. I will focus on the ARA and RNO-G experiments, which rely on the radio-Cherenkov (Askaryan) emission produced in neutrino nucleon interactions in dense media such as glacial ice.