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Ultra-High Energy Neutrino Radio Frequency Detectors

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The cosmic ray flux cut off above primary energies of $10^{19.5}$ eV leads us to expect an ultra-high energy (UHE) neutrino flux due to the GZK effect. The detection of these UHE cosmic neutrinos will add to the understanding of the sources and physics of UHE cosmic rays.

On interacting within a dense medium, a UHE neutrino will produce an extended particle shower, which in turn produces a coherent radio frequency pulse via the Askaryan effect. Several radio detectors have been and are being developed to search for these signals in Arctic and Antarctic ice, including the ANITA, ARA, ARIANNA, and EVA experiments. This talk will present the status and development plans of these UHE neutrino radio frequency detectors and their current results.

Summary

A summary of the status of radio frequency detectors for UHE neutrino detection.

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