

Background Rejection in the ARA Experiment

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The Askaryan Radio Array (ARA) is a radio frequency observatory under construction at the South Pole that is searching for ultrahigh energy neutrinos via the Askaryan effect. Thermal fluctuations currently dominate the trigger-level background for the observatory and anthropogenic sources also introduce a significant source of noise. By taking advantage of the observatory's regular geometry and the expected coincident nature of the RF signals arriving from neutrino-induced events, this background can be filtered efficiently. This contribution will discuss techniques developed for the ARA analyses to reject these thermal signals, to reject anthropogenic backgrounds, and to search for neutrino-induced particle showers in the Antarctic ice. The results of a search for neutrinos from GRBs using the prototype station using some of these techniques will be presented.

Summary

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