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The Askaryan Radio Array

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Building on the expertise gained by RICE, ANITA and IceCube's radio extension in the use of the Askaryan effect in cold Antarctic ice, we are currently developing an antenna array known as ARA (The Askaryan Radio Array) to be installed in boreholes extending 200 m below the surface of the ice near the geographic South Pole. The unprecedented scale of ARA, which will cover a fiducial area of 80 square kilometers, was chosen to ensure the detection of the flux of neutrinos "guaranteed" by the observation of the GZK cutoff by HiRes and the Pierre Auger Observatory. Funding to develop the instrumentation and install the first prototypes has been granted, and the first components of ARA are planned for installation during the austral summer of 2010-2011. Within 3 years of commencing operation, the full ARA will exceed the sensitivity of any other instrument in the 0.1-10 EeV energy range by an order of magnitude. The primary goal of the ARA array is to establish the absolute cosmogenic neutrino flux through a modest number of events.

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