

First cosmogenic neutrino limits from the ARA detector at the South Pole

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The Askaryan Radio Array (ARA) is an ultra-high energy (>100 PeV) cosmic neutrino detector which is in phased construction near the South Pole. ARA searches for radio Cherenkov-like emission from particle cascades induced by neutrino interactions in the ice using radio frequency antennas (~150-800MHz) deployed at a design depth of 200m in the Antarctic ice. A prototype ARA Testbed station was deployed at ~30m depth in the 2010-2011 season and the first three full ARA stations were deployed in the 2011-2012 and 2012-2013 seasons. We present the first neutrino search with ARA using data taken in 2011-2012 with the ARA Testbed, and 2011-2014 with the first full ARA stations along with the resulting constraints on the neutrino flux from 100 PeV to 100 EeV.

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