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## Advancing ARA: the Next-Generation (ARA-Next) DAQ System

The Askaryan Radio Array (ARA) has been operating at the South Pole for over a decade, searching for ultrahigh-energy astrophysical and cosmogenic neutrinos using the Askaryan effect. ARA has always been at the forefront of testing innovative trigger designs and advancing electronic upgrades, with ongoing DAQ improvements over the past 2–3 years and a long-term plan to transition to Radio Frequency System-on-Chip (RFSoC) technology. This upgrade enables real-time data processing and sophisticated triggers, enhancing efficiency by identifying double pulses from in-ice neutrino interactions, using templates for cosmic rays, correlating events with IceCube , and filtering anthropogenic noise through directional analysis. In 2024, two of the five ARA stations received DAQ upgrades, improving the existing electronics, with RFSoC-based DAQ foreseen in the coming years. In this presentation, I will discuss ARA's recent progress, including the challenges and successes of this season's electronics upgrades at the Pole, as well as future plans for ARA-Next with RFSoC-based DAQ.

## **Collaboration(s)**

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