

IceCube Upgrade and Gen2

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Abstract content

Since its discovery of the astrophysical neutrino flux, the IceCube Neutrino Observatory has continued to provide invaluable knowledge about both potential neutrino sources and neutrino properties at the GeV-PeV scale through its detection of neutrino interactions via Cherenkov radiation in the deep South Pole ice. In addition, IceCube is a strong partner in the field of multi-messenger astronomy, which involves rapid follow-up of neutrino events with good pointing precision. I will report on the plans for the IceCube-Upgrade, which aims to deploy new optical modules into the deep ice along with improved calibration devices. This Upgrade will greatly improve our understanding of the detector medium, allowing for reduced uncertainties in angular and energy reconstruction, and thereby more precise measurements of neutrino properties, and more precise pointing towards potential astrophysical sources. In addition, the Upgrade will allow for in-situ testing of new optical modules currently under development for the future IceCube-Gen2 detector.

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