

IceCube-Gen2: The next generation neutrino observatory in Antarctica

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The IceCube observatory, located at the Southpole has been taking high quality data in full operation since 2011. The observation of astrophysical neutrinos at IceCube led to a new era of multi-messenger astronomy. The next generation of IceCube (Gen2) is currently under design aiming at searching for point sources and understanding the production mechanisms at the source. The upgrade will also greatly increase the discovery potential for PeV tau neutrinos, GZK neutrinos and the Glashow resonance. It could in addition allow hybrid measurements at the surface and in-ice at a wider zenith angle range, which provides information on the mass composition of cosmic-rays and gives access to a unique energy range for studying hadronic interaction models.

In this talk, I will discuss current efforts for the upgrade including new sensor proposals for the in-ice and surface detectors. Simulations of the sensitivities to the physics cases will be shown.

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