Executive Summary

"Simulation and sensitivities for a phased IceCube-Gen2 deployment"

What is this contribution about? This contribution focuses on estimating the sensitivity of the IceCube-Gen2 detector, a next generation neutrino observatory at the South Pole.

What have we done? We have simulated the optical component of the IceCube-Gen2 detector at various stages of the construction process, and estimated how the science reach of the instrument evolves over time. We study the effective area and angular resolution, as well as higher-level quantities such as the discovery potential to steady and transient sources of neutrinos.

What is the result? We find that IceCube-Gen2 will have unprecedented sensitivity to the neutrino sky even midway through deployment. For example, halfway through the $\sim$ 7 year deployment process, the detector will have approximately twice the effective area of IceCube to horizontally throughgoing events and better angular resolution by $\sim$50%.