

Abstract Submitted
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IceTray UHE Neutrino Reconstructions Analysis.¹ JESSICA KIENBAUM, University of Wisconsin - Whitewater, BRIAN CLARK, Michigan State University, ICECUBE COLLABORATION — The IceCube Neutrino Observatory is a cubic kilometer hexagonal lattice deployed at the South Pole comprised of photomultiplier tubes to detect Cherenkov light from neutrino-nucleon interactions in the ice. Methods of ultra-high energy (UHE) event reconstruction used by IceCube remain key components in pointing to possible neutrino sources in extremely distant parts of the universe. In this study, high performance distributed cluster computing using SLURM and Monte Carlo simulated neutrino and muon events were used in the analysis of Ophelia and LineFit reconstruction techniques. Cuts were applied to select for bright, charge-current interaction events. Error analysis and energy dependence comparisons showed that Ophelia and LineFit have comparable accuracies for UHE neutrino reconstructions, and it was demonstrated that new reconstruction algorithms can be used that are better supported and more robust.

¹IceTray UHE Neutrino Reconstructions Analysis

Jessica Kienbaum
University of Wisconsin - Whitewater

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