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Optimization of the optical array geometry for IceCube-Gen2

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IceCube-Gen2 is a planned extension of the IceCube Neutrino Observatory at the South Pole designed to study the high-energy neutrino sky from TeV to EeV energies with a five times better point source sensitivity than the current IceCube detector. This is achieved by deploying 120 new strings with attached optical sensors in a pattern around IceCube that features considerably larger distances between individual strings than the ~125m for the existing detector. Here, we present the results of an optimization study searching for the best point source sensitivity while varying the IceCube-Gen2 string spacing between 150m and 350m.

Keywords

IceCube-Gen2; point source sensitivity; detector geometry; optimization.

Collaboration

IceCube-Gen2

other Collaboration

Subcategory

Future projects

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