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State of the Ice Model in IceCube observatory

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IceCube is a neutrino observatory located at the South Pole that uses Antarctic ice as a medium for detection of Cherenkov photons. As such, analysis of the data relies on our understanding of the properties of ice within and around the instrumented volume. Over the years we have made significant progress in understanding the glacial ice and now have a comprehensive model that covers many of the relevant aspects of the photon propagation in it. In this report we give a historical overview of the ice description within the IceCube detector, list some of the remaining issues, and assess how much more improvement is still needed. As the IceCube Upgrade is expected to be installed in less than a year, with several new types of calibration devices aiming to further our understanding of ice, this is the perfect time to review the current state of the ice model.

Collaboration(s)

IceCube

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