

Latest Results on Neutrino Oscillation from the IceCube Neutrino Observatory

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The IceCube Neutrino Observatory is a cubic-km size detector consisting of 5000 light sensors buried within the ice of the South Pole. Together with its inner array DeepCore (which has a lower energy threshold of $\sim 5\text{GeV}$), IceCube detects neutrinos of all flavours by recording the Cherenkov light emitted by both neutral and charged current interactions within the ice. Given its $\sim\text{GigaTon}$ detection volume and sensitivity to a wide range of energies and baselines, IceCube is well suited to perform neutrino oscillation measurements, using neutrinos produced by cosmic rays in the atmosphere.

Neutrino oscillation is an important probe for exploring the limits of current paradigms in particle physics, and offers an experimental handle to find evidence for new physics. IceCube does so by performing precision measurements of the properties of oscillations, such as muon neutrino disappearance and tau neutrino appearance. It can also probe the neutrino mass ordering, and test multiple theoretical predictions of new physics, such as the existence of sterile neutrinos and Non-Standard Interactions (NSI). This talk will present the latest neutrino oscillation results from the IceCube Collaboration

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Primary author: BOURBEAU, Étienne (University of Copenhagen)

Presenter: BOURBEAU, Étienne (University of Copenhagen)

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