

Testing the Neutrino Mass Ordering with Multiple Years of IceCube/DeepCore

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The measurement of the Neutrino Mass Ordering (NMO), i.e. the ordering of the three neutrino mass eigenstates, is one of the major goals of many future neutrino experiments. One strategy is to measure matter effects in the oscillation pattern of atmospheric neutrinos as proposed for the PINGU extension of the IceCube Neutrino Observatory.

Already, the currently running IceCube/Deepcore detector can explore this type of measurement. Albeit with lower significance, such measurement can contribute to the current understanding. Furthermore, such an analysis exercises the measurement principle and evaluation of systematic uncertainties and thus prototypes future analyses with PINGU.

We present a three-dimensional likelihood analysis for multiple years of IceCube data searching for indications of the NMO with a data sample reaching to energies below 10GeV.

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