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Physics Reach of ICAL at INO

The upcoming Iron Calorimeter (ICAL) detector at the India-based Neutrino Observatory (INO) cavern aims to explore the Earth's matter effect by observing the energy and zenith angle dependence of the atmospheric neutrinos in the multi-GeV range. Due to its charge identification capability using a magnetic field, the ICAL detector can study neutrino and anti-neutrino events separately. The design of ICAL is primarily optimized to measure muon momentum, however it is also capable of measuring the hadron energy in each event. These features are crucial to identify the neutrino mass hierarchy and to improve the precision on the atmospheric neutrino mixing parameters. I will elaborate on these issues and present the latest physics simulation results of the ICAL experiment.

Summary

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