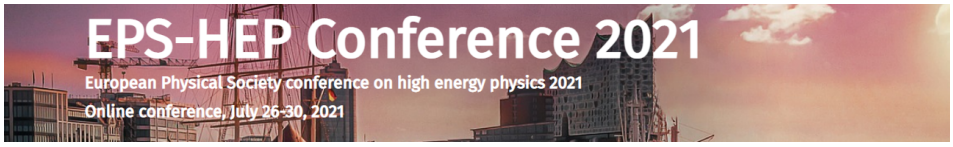

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Simulation of muon-spin rotation for estimation of magnetic field in INO-ICAL

The India-based Neutrino Observatory (INO) collaboration, a multi-institutional effort to build a 50 kton magnetised Iron Calorimeter (ICAL) for studying neutrino oscillations. The magnetic field in the ICAL, induced by copper coils, will be a crucial input for the track fitting algorithms that reconstruct the four-momenta of atmospheric neutrinos. So far, the magnetic field map is obtained from simulations which may not correspond to the true magnetic field inside the iron plates owing to many factors including approximations in the simulation and the change in the elemental composition of the iron plates etc,. Therefore an alternate non-destructive approach is desirable so that the magnetic field is mapped without disturbing the setup. In this work we present the first results of a simulation study that employs the muon spin-rotation technique to estimate the magnetic field.

Collaboration / Activity

INO

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