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【315】 Optimization of muon EDM experimental setup using simulations

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The potential discovery of non-zero electric dipole moments (EDMs) of leptons implies Charge-Parity violation beyond the Standard Model. This makes the experimental search for lepton EDMs a valuable tool to test scenarios explaining observations like matter-antimatter asymmetry, non-zero neutrino masses, and dark matter. A dedicated experimental search for the muon EDM is underway at PSI using the frozen spin technique, which suppresses the anomalous spin precession of muons in a storage ring by applying a radial electric field. The experiment has two phases, with the first phase demonstrating the frozen spin technique. This talk describes the optimization of the first phase of the experiment through simulation studies.

Theoretical Work

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