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Experiment for direct measurements of short-lived particle dipole moments at LHC

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Magnetic and electric dipole moments of fundamental particles provide powerful probes for physics within and beyond the Standard Model.For the case of short-lived particles, these have not been experimentally accessible to date due to the difficulties imposed by their short lifetimes. The R&D on bent crystals and the experimental techniques developed to enable such measurements are discussed. An experimental test at the insertion region IR3 of the LHC is under consideration as proof of principle of a future fixed-target experiment for the measurement of charm baryon dipole moments. The design of the experiment and the main goals of the test are presented.

In-person participation

Yes

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