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Prospects for electromagnetic dipole moments of short-lived particles at the LHC

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Summary

Magnetic and electric dipole moments of fundamental particles are powerful probes for physics within and beyond the Standard Model. However, these have not been experimentally accessible to date for the case of short-lived particles, due to the difficulties imposed by their short lifetimes. In the recent years, the possibility of directly measuring the electromagnetic dipole moments of heavy baryons and ultimately the tau lepton, produced in fixed-target collisions at the LHC and channelled in bent crystals, has been considered. This talk will discuss the feasibility of the proposed experiment based on the upgraded LHCb detector, along with the physics opportunities using the dedicated fixed-target, proton-gas and proton-proton collisions. Perspectives for different luminosity scenarios will be outlined.

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