

DIPOLE-b: direct measurement of dipole moments of short-lived particles at the LHC(b)

Wednesday, 29 July 2020 20:53 (15 minutes)

Magnetic and electric dipole moments of fundamental particles are powerful probes for physics within and beyond the Standard Model. 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, direct measurements of electromagnetic dipole moments of heavy baryons and ultimately the tau lepton has been considered. Novel experimental techniques and feasibility studies of the proposed experiment based on the upgraded LHCb detector will be discussed, along with the physics opportunities using the dedicated fixed-target, proton-gas and proton-proton collisions. Perspectives for different luminosity scenarios will be outlined.

I read the instructions

Secondary track (number)

06

Primary authors: NERI, Nicola (Università degli Studi e INFN Milano (IT)); MERLI, Andrea (Università degli Studi e INFN Milano (IT)); FU, Jinlin (Università degli Studi e INFN Milano (IT)); MARANGOTTO, Daniele (Università degli Studi e INFN Milano (IT)); AIOLA, Salvatore (Università degli Studi e INFN Milano (IT)); MARTINEZ VIDAL, Fernando (IFIC - University of Valencia and CSIC (ES)); HENRY, Louis (Instituto de Física Corpuscular (IFIC)); RUIZ VIDAL, Joan (Univ. of Valencia and CSIC (ES)); GIORGI, Marcello (INFN&Università' di Pisa); GARCIA MARTIN, Luis Miguel (Univ. of Valencia and CSIC (ES)); SPADARO NORELLA, Elisabetta (Università degli Studi e INFN Milano (IT))

Presenter: AIOLA, Salvatore (Università degli Studi e INFN Milano (IT))

Session Classification: Quark and Lepton Flavour Physics

Track Classification: 05. Quark and Lepton Flavour Physics