Contribution ID: **95** Contribution code: **THP084** Type: **Poster Presentation**

The potential high orders of vertical electric field systematic effect due to hyperbolic/elliptical deformed electrode plates in the proton-EDM ring

Thursday 14 August 2025 16:00 (2 hours)

To achieve high precision in a storage ring experiment, it is essential to eliminate field errors up to a certain order to ensure they do not contribute to systematic effect to the experiment. In this study, we modeled electrode plates of electrostatic deflector with hyperbolic/elliptical shape deformation schemes. We analyzed the resulting beam dynamics and spin effects caused by these higher-order electric field errors and explored the potential systematic effects introduced by such deformed electrostatic deflectors within the proton Electric Dipole Moment (pEDM) Symmetric-Hybrid ring design*.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

- ZHANIBEK OMAROV et al. PHYS.REV.D105,032001(2022)

Funding Agency

Work supported by Brookhaven Science Associates, LLC under Contract No. DE-SC0012704 with the U.S. Department of Energy.

I have read and accept the Privacy Policy Statement

Yes

Author: LEE, Jonathan (Stony Brook University)

Co-authors: DHITAL, Bhawin (Brookhaven National Laboratory); HUANG, Haixin (Brookhaven National Laboratory); MORSE, William (Brookhaven National Laboratory); SEMERTZIDIS, Yannis (Korea Institute for Advanced Study)

Presenter: DHITAL, Bhawin (Brookhaven National Laboratory)

Session Classification: THP: Thursday Poster Session

Track Classification: MC4 –Hadron Accelerators