



Contribution ID: 133

Type: Poster

## Impact of the nuclear structure on the isobar run at RHIC

Wednesday, 6 April 2022 18:10 (4 minutes)

No chiral-magnetic effect signature has been observed in the experimental analysis of the isobar run at RHIC [1]. In this talk, based on [2], we highlight the influence of the nuclear structure of the isobar systems on the CME search within a relativistic hadronic transport approach (SMASH). We show that the quadrupole deformation of Ru enhances the eccentricity ratio between the isobars in ultra-central collisions up to 10%, thus leading to different CME backgrounds in the two isobar systems. In addition, the neutron skin of Zr reduces a factor of 2, from 10% to 5%, the magnetic field strength difference in peripheral collisions. These two predictions suggest a significantly smaller CME signal to background ratio than previously expected, as has been confirmed experimentally.

[1] 2109.00131

[2] Phys.Rev.C 101 (2020) 6, 061901

**Primary authors:** Dr SOTO ONTOSO, Alba (IPhT); ELFNER, Hannah; HAMMELMANN, Jan; STRIKMAN, Mark (Penn State University); ALVIOLI, Massimiliano (CNR-IRPI)

**Presenter:** ELFNER, Hannah

**Session Classification:** Poster Session 1 T02

**Track Classification:** Chirality, vorticity and spin polarization