

# Search for the Chiral Magnetic Effect with Forced Match of Multiplicity and Elliptic Flow in Isobar Collisions at STAR

(for the STAR collaboration)

1 The STAR Collaboration has reported results from a blind analysis of isobar  
2 collisions ( $^{96}_{44}\text{Ru} + ^{96}_{44}\text{Ru}$ ,  $^{96}_{40}\text{Zr} + ^{96}_{40}\text{Zr}$ ) at  $\sqrt{s_{\text{NN}}} = 200$  GeV in search of the chiral  
3 magnetic effect (CME). Significant differences have been observed in the measured  
4 multiplicity ( $N$ ) and elliptic flow ( $v_2$ ) between the two isobar systems [1]. In this  
5 contribution, we present post-blind analyses of the isobar data with a forced-match  
6 technique. We tune the  $N$  and  $v_2$  distributions in the two isobar systems to be  
7 almost identical with a weighting procedure, and then compare the CME-sensitive  
8 observables (the  $\Delta\gamma$  correlator and signed Balance Functions [2]) between the two  
9 systems with matched  $N$  and  $v_2$ . We will present the results as a function of  
10 centrality, and discuss the implications of these findings.

11 [1] M. Abdallah *et al.* (STAR Collaboration), Phys. Rev. C **105**, 014901 (2022)

12 [2] S. Choudhury *et al.*, Chinese Phys. C **46** 014101 (2022)