

# Global spin polarization of $\Lambda$ hyperons in Beam Energy Scan II at RHIC-STAR

Kosuke Okubo (for the STAR Collaboration)  
University of Tsukuba

1        In non-central heavy-ion collisions, large orbital angular momentum can be man-  
2 ifested in the form of vorticity in the medium. Due to the spin-orbit coupling, the  
3 spin directions of particles are aligned with the orbital angular momentum of the  
4 system. Global spin polarization of  $\Lambda$  and  $\bar{\Lambda}$  hyperons has been measured in Au+Au  
5 collisions from  $\sqrt{s_{NN}} = 7.7$  GeV to 5.02 TeV [1–3]. The STAR fixed target program  
6 provides an opportunity to extend such measurements at even lower energies. In this  
7 talk, we will report differential measurements such as centrality, rapidity, and trans-  
8 verse momentum dependence of global spin polarization of  $\Lambda$  hyperons in Au+Au  
9 collisions at  $\sqrt{s_{NN}} = 3.0, 7.2$  GeV with the fixed-target configuration.

## 10 **References**

- 11 [1] L.Adamczyk et al.(STAR) Nature 548 62 (2017).  
12 [2] J.Adam et al.(STAR), Phys. Rev. C 98 14910 (2018)  
13 [3] S.Acharya et al.(ALICE), Phys. Rev. C 101, 044611 (2020)