

1 Strange hadron production in O+O collisions at  
2  $\sqrt{s_{\text{NN}}} = 200$  GeV at STAR

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4 Results from high energy collisions of asymmetric small systems (p+Au,  
5 p+Pb, etc.), such as flow and enhancement of strangeness production, have  
6 generated significant discussions in the field about the initial conditions, includ-  
7 ing the size of the system, needed to generate a Quark-Gluon Plasma (QGP). A  
8 smooth increase in the ratio of strange hadron production to the pion yield as a  
9 function of multiplicity has been found in various collision systems (p+p, p+A,  
10 A+A). In 2021, STAR collected large datasets with  $\sqrt{s_{\text{NN}}} = 200$  GeV O+O col-  
11 lisions at RHIC, a unique symmetric small system collision which allows a more  
12 straightforward geometry mapping with centrality than those asymmetric small  
13 system collisions like He+Au, or d+Au. This poster will focus on the measured  
14 transverse momentum ( $p_T$ ) spectra, and bulk strange hadron ( $\Lambda, \bar{\Lambda}, \Xi, \bar{\Xi}, \Omega, \bar{\Omega}$ )  
15 plus pion production in O+O collisions. With the high statistics of the dataset  
16 and the extended kinematic coverage benefit from the iTPC upgrade, we can  
17 investigate the dependence of strangeness production in O+O on transverse  
18 momentum, centrality, and rapidity.