

1 Centrality and transverse momentum dependence
2 of strange and multi-strange hadron production
3 in O+O collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV at STAR

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