

# Femtoscopy of Strange Baryons in Heavy-ion Collisions at RHIC-STAR

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1 Femtoscopy is a powerful technique to study the information about the  
2 space-time evolution of the emitting source and final state interactions  
3 in heavy-ion collisions. Femtoscopy analysis of strange baryons, which  
4 contain strange quarks, offer an important role of studying the hyperon-  
5 nucleon ( $Y$ - $N$ ) and hyperon-hyperon ( $Y$ - $Y$ ) interactions. In addition,  
6 it can also be used to search for the bound state of strange dibaryons,  
7 which have long been a subject of interest in understanding the strong  
8 interaction beyond conventional hadrons.

9 In this talk, we will present the femtoscopy analysis of strange baryons,  
10 including  $\Lambda$ - $\Lambda$ ,  $p$ - $\Xi^-$ ,  $p$ - $\Omega^-$  pairs in Isobar collisions (Ru+Ru, Zr+Zr)  
11 at  $\sqrt{s_{\text{NN}}} = 200$  GeV and  $p$ - $\Lambda$  in Au+Au collisions at  $\sqrt{s_{\text{NN}}} = 3$  GeV.  
12 The correlation functions are analyzed within the Lednicky-Lyuboshitz  
13 formalism. The extracted scattering length and effective range will be  
14 compared with recent Lattice QCD and effective theory model calcula-  
15 tions. The physics implications for the formation of strange dibaryon  
16 bound state will also be discussed.