Measurement of Λ - Λ and Ξ - Ξ correlation functions in $\sqrt{s_{\rm NN}} = 200~{\rm GeV}$ Au+Au collisions at RHIC-STAR

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Understanding of baryon-baryon interactions is important to examine the existence of stranglets and various exotic hadrons, e.g. H-dibaryon, and to model astronomical objects such as neutron stars. However hyperon-hyperon interactions are not fully understood yet. In high-energy heavy-ion collisions, a large number of particles including (multi-)strangeness 8 are produced, which may allow us to study those interactions via femtoscopic measurements 9 with better precision. At low relative momentum, the correlations between two particles 10 are influenced by the strong and Coulomb interactions as well as quantum statistical effect 11 sensitive to the emission source size for identical pairs. Thus measuring correlations between 12 two baryons is a useful probe to extract the scattering parameters between the baryons and the size of the particle emission. 14 In this talk, we present measurements of Λ - Λ correlations in Au+Au collisions at $\sqrt{s_{\rm NN}}$ 15 = 200 GeV with largely improved statistical precision compared to previous measurements 16 for studying a possible Λ - Λ bound state. We will also present the first measurements of Ξ - Ξ 17 correlations in Au+Au collisions at $\sqrt{s_{\rm NN}} = 200$ GeV.