

Abstract Submitted
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Study of $\Lambda - \Lambda$ correlations with the STAR detector at RHIC

NEHA SHAH, University of California Los Angeles, STAR COLLABORATION — Considerable experimental efforts have been devoted to search for the existence of dibaryon H, a six quark state, proposed by Jaffe [1]. It has also been proposed that the H particle would appear as a bump in the $\Lambda - \Lambda$ invariant mass spectra if the H is a resonance state, or the H would lead to a depletion of the $\Lambda - \Lambda$ correlation near the threshold if the H is weakly bound. In this scenario, the mass of H is expected to be in the range (2230, 2380) MeV. Because of high rate of strange particle production per heavy ion collision RHIC is a unique place to search for the H. The $\Lambda - \Lambda$ correlation measurements at RHIC are sensitive to their mutual interactions, which can be used to probe whether there is a stable H particle or H resonance. This sensitivity is unique at RHIC because of the source size for Λ production and the allowed range of $\Lambda - \Lambda$ scattering parameters in nucleus-nucleus collisions. We present the measurement of $\Lambda - \Lambda$ correlations in Au+Au collisions at $\sqrt{s} = 39\text{GeV}$ using the STAR experiment at RHIC.

[1] R. L. Jaffe, Phys. Rev. Lett. 38, 195 (1977).

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