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Detecting the Anti-helium 4 and anti-hypertriton from the RHIC

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In this talk, I will present a brief review on the recent measurements of antimatter particles at RHIC. The observations of the antihypertriton [1] and antihelium-4 nucleus [2] from the STAR collaboration are highlighted. I will also discuss the new lifetime measurement of hypertriton [3] as well as the strangeness population factor as a function of collision energy of Au + Au [4]. The current experimental search for antinuclei in cosmic rays is also mentioned in this talk. Finally I present a mechanism of antinuclei formation at RHIC with the help of thermal and coalescence models [5].

[1]. Observation of an Antimatter Hypernucleus, the STAR Col., Science 328, 58 (2010)

[2]. Observation of the antimatter helium-4 nucleus, STAR Col., Nature 473, 353 (2011)

[3]. Yuhui Zhu for the STAR Coll., QM2012 proceeding.

[4]. Searching for onset of deconfinement via hypernuclei and baryon-strangeness correlations, S. Zhang, J. H. Chen, H. Crawford, D. Keane, Y. G. Ma and Z. B. Xu, Phys. Letts. B 684 (2010) 224

[5]. Production of light (anti)nuclei, (anti)hypertriton, and di-Λ in central Au+Au collisions at energies available at the BNL Relativistic Heavy Ion Collider，L. Xue, Y. G. Ma, J. H. Chen, S. Zhang, Phys. Rev. C 85, 064912 (2012)