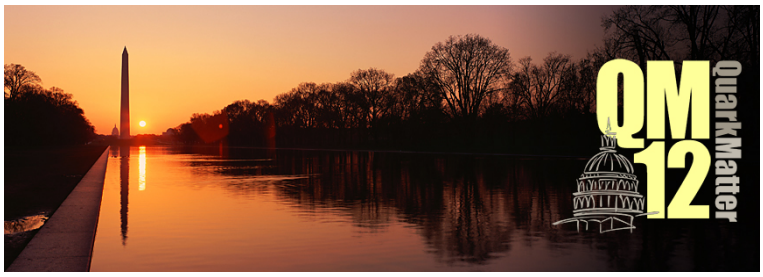

Contribution ID: **308** Type: **Poster**

Light (anti)nucleus production in $\sqrt{s_{NN}}$=7.7-200 GeV Au+Au collisions in the STAR Experiment

Thursday, August 16, 2012 4:00 PM (2 hours)

In the dense and high-temperature systems formed in relativistic heavy-ion collisions, final-state composites - light nuclei and antinuclei - are formed close to the freeze-out hypersurface. Their spectra, compared to those of the constituent (anti)nucleons, can be described by picturing the formation process as the coalescence of a number of nucleons that are close to each other in phase space. This makes the composite spectra sensitive to the distribution of the constituent nucleons in phase space. It also implies a sensitivity of the spectra to the local densities and flow velocities of the source. In the coalescence picture, specific ratios of these spectra provide information on the baryon densities and homogeneity volumes. The STAR experiment has collected data from Au+Au collisions at seven beam energies, $\sqrt{s_{NN}}$, ranging from 7.7 to 200 GeV. The particle identification is performed for transverse momenta from $\sim$0.3 to \raisebox{-0.6ex}{$\stackrel{>}{\sim}$}3 GeV/c using a combination of the ionization energy loss in the Time Projection Chamber and the time of flight. The spectra for (anti)protons, (anti)deuterons, and (anti)tritons at mid-rapidity, and the source information inferred from these spectra, will be presented and compared to several dynamic coalescence models.

Primary author: LLOPE, W.J. (Rice University)

Co-author: FOR THE STAR COLLABORATION, . (.)

Presenter: LLOPE, W.J. (Rice University)

Session Classification: Poster Session Reception

Track Classification: Global and collective dynamics