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Type: **Theory talk**

Light-nuclei production in heavy-ion collisions at RHIC BES in updated Three-fluid Hydrodynamics-based Event Simulator (THESEUS).

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We present an updated event generator THESEUS, based on the three-fluid dynamics (3FD), complemented by UrQMD cascade for the late stage of the nuclear collision. The generator is extended to simulate light-nuclei production in relativistic heavy-ion collisions via thermal mechanism, on the same basis as hadrons.

We present the rapidity, transverse momentum spectra, first (v_1) and second (v_2) flow harmonics of deuterons, tritons, ^3He at different collision energies and impact parameters in the RHIC BES range. The results are compared with experimental data from NA49 and STAR.

We show that anti-deuteron spectra from THESEUS are in good agreement with STAR data.

We demonstrate the contributions from the excited states of Helium to the yields of deuteron, triton and ^3He .

The reproduction is achieved without any extra parameters, while the original coalescence approach in 3FD requires a tuning of the coalescence coefficients for each light nucleus separately.

Collaboration

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