



Contribution ID: 73

Type: **Talk**

## Light-nuclei production in heavy-ion collisions in Three-fluid Hydrodynamics-based Event Simulator (THESEUS)

*Tuesday, 31 August 2021 11:30 (30 minutes)*

In this talk we present an updated version of event generator THESEUS, based on the three-fluid dynamics (3FD), supplemented by UrQMD cascade for the late stage of the nuclear collision.

The generator gives opportunity to simulate light-nuclei production in relativistic heavy-ion collisions via thermal mechanism, on the same basis as hadrons. The generator is designed for BES-RHIC, SPS, NICA and FAIR collision energies.

Rapidity, transverse momentum spectra, first  $v_1$  and second  $v_1$  flow harmonics of deuterons, tritons,  $^3\text{He}$  are demonstrated for heavy-ion collisions at RHIC BES range. The results are compared with experimental data from NA49 and STAR.

The anti-deuteron spectra from THESEUS are in good agreement with STAR data. The contributions from the excited states of Helium to the yields of deuteron, triton and  $^3\text{He}$  are presented.

The reproduction of light nuclei spectra is reached without any extra fitting parameters, while in the original coalescence approach in 3FD it is necessary to adjust the coalescence coefficients for each light nucleus separately.

### Is this abstract from experiment?

No

### Name of experiment and experimental site

N/A

### Is the speaker for that presentation defined?

Yes

### Details

Marina Kozhevnikova, JINR, Russia, <http://www.jinr.ru/main-en/>

### Internet talk

No

**Primary authors:** KOZHEVNIKOVA, Marina (Joint Institute for Nuclear Research, Dubna, Russia); IVANOV, Yuri (NRC Kurchatov Institute); KARPENKO, Iurii (FNSPE CTU in Prague); BLASCHKE, David (University of Wroclaw); ROGACHEVSKY, Oleg (JINR)

**Presenter:** KOZHEVNIKOVA, Marina (Joint Institute for Nuclear Research, Dubna, Russia)

**Session Classification:** Workshop on Physics at FAIR-NICA-SPS-BES/RHIC