Contribution ID: **38** Type: **not specified**

Light nuclei production in ultra-relativistic heavy-ion collisions at LHC

Collision of heavy nuclei at ultra-relativistic energies offer a unique opportunity to study the formation dynamics of light nuclei. Being loosely bound systems via residual strong interactions, their existence in the hot and dense medium, is very unlikely and possess interesting questions on their production mechanism in these energetic collisions. In the present contribution we will describe a "thermo-coalescence" model, a hybrid mechanism to describe the light nuclei production at ultra-relativistic energies. In this approach the transverse momentum distribution of protons are first fitted following a hydro-inspired boost-invariant blast-wave model. The extracted parameters are then used to describe the spectra of light nuclei using a coalescence prescription. Analysis of the measured yield and spectra of the deuterons produced in $\sqrt{s_{NN}} = 2.76$ TeV and $\sqrt{s_{NN}} = 5.02$ TeV Pb-Pb collisions at LHC for various centralities will be discussed in detail

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Track Classification: 4. Collective dynamics - conserved charges, spin, vorticity, freezeout, afterburner