Non-Gaussian shaped density profile in light nuclei production in heavy ion collision

This talk focus on the light nuclei production within the framework of coalescence model. By implementation of the characteristic function of the spatial density distribution function of the phase space density, we derive the yield of light nuclei in terms of various orders of cumulants for the spatial density distribution function. We found that the leading terms of the spatial cumulants in the yield nuclei share the similar form and could be canceled out in light nuclei ratio, whereas the higher order ones (non-Gaussian shaped density profile) remain and play an important role in the interpretation of the behavior of light nuclei yield ratio.

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