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Resolving cluster production with the help of elliptic flow

We argue that the actual production mechanism of deuterons and larger nuclear clusters - coalescence or direct thermal production - can be resolved with the help of elliptic flow. Coalescence is sensitive to the spatial extension of cluster wave function and therefore reflects the change of the size of producing homogeneity region when looking at cluster production in different azimuthal directions. We verify this idea with the help of Monte Carlo model that simulates emission of hadrons from a parametrised freeze-out hypersurface. The model is tuned on p_T spectra and elliptic flow of hadrons, and includes decays of resonances. Comparison of v_2 predictions for deuterons for the two mechanisms from a hybrid dynamical model (TRENTO + vHLL + SMASH) is also presented.

Category

Theory

Collaboration (if applicable)

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