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Molecular structure hadron in coalescence model

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We calculate the yields of molecular configuration hadrons produced by heavy ion collision using coalescence model. First, we calculated the transverse momentum distribution of deuteron using the coalescence model from proton transverse momentum distribution in Pb-Pb collisions at 2.76TeV measured by ALICE collaboration. From this, we estimate the parameters required for coalescence model at kinetic freeze-out. We then calculate the transverse momentum distribution of helium-3 using this parameter and compared with the experimental results by ALICE collaboration to confirm that parameterizaion was successful. After this, we assume that X(3872) is molecular structures and estimate the transverse momentum distributions of X(3872) using coalescence model. Additionally, we predict the production of $X(3872)$ and $f_0(980)$ assuming they are loosely bounded molecular configurations using the large size limit of hadron in coalescence model. Also, we compare the yields of these hadrons calculated using coalescence model with statistical hadronization model.

Present via

Offline

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