

WPCF 2023 - XVI Workshop on Particle Correlations and Femtoscopy & IV Resonance Workshop 2023



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Advanced coalescence model based on femtoscopy measurements

Friday, 10 November 2023 09:50 (25 minutes)

The production of deuterons in pp collisions at $\sqrt{s} = 13$ TeV is simulated on an event-by-event basis using a coalescence afterburner based on a state-of-the-art Wigner-function formalism, and EPOS 3 and PYTHIA 8.3 as event generators. The nucleon-emitting source is modelled such to reproduce the m_T -dependence of the source size measured by ALICE using femtoscopy. For the first time, the results of this model show that using a realistic wavefunction for deuterons, namely Argonne v_{18} , it is possible to reproduce the measured deuteron spectra with no free parameters.

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