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Overview of Femtoscopic Studies in Small Collision Systems

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Femtосcopy is a technique that connects measured particle correlation functions to the properties of hadron emission and final-state interaction. Recent advancements in modelling the emission source function in pp collisions have revealed a common hadron source for primordial particles. This discovery has been instrumental in achieving a better understanding of the source function, leading to more precise studies of the strong interaction - an essential ingredient in developing a realistic nuclear equation of state.

This talk will provide an overview of femtосcopy studies in pp collisions, highlighting the latest developments in constraining the source function. Additionally, a newly explored link between source properties and deuteron momentum spectra, assuming a coalescence formation mechanism, will be presented and discussed. This relationship has been investigated using a toy Monte Carlo model, demonstrating that the coalescence mechanism in pp collisions depends on event multiplicity, not on the collision energy. This finding can be utilised to study anti-nuclei formation at lower centre-of-mass collision energies, relevant for indirect dark matter searches.

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