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Proton source measurement in pp collisions at 900 GeV with the femtoscopy technique

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Key aspects in modeling the formation of bound systems such as the deuteron in high-energy collision are the understanding of the strong interaction between nucleons and the characterization of the nucleon-emitting source, which is particularly relevant in models of nucleon coalescence. In this respect, the femtoscopy technique has proven to be a great tool to study both the particle emitting source and the strong interactions in detail.
In this contribution, the femtoscopic method is used to measure proton-proton correlations and to extract the two-particle emission source size in pp collisions at $\sqrt{s}$ = 900 GeV, which is the lowest collision energy at the LHC using data from the Run 3 campaign and the upgraded ALICE detector. Applications of the results as input for the modeling of (anti)deuteron formation by coalescence are discussed.

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