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Exploring the hadronic interactions in three-body systems at the LHC

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The femtoscopy technique has been recently used at the Large Hadron Collider to perform new studies on hadronic interactions in few-body systems. The method exploits high-energy collisions as sources of hadrons and analyse the momentum correlation among the emitted particles to pin down the effects induced by their final state interaction. The interpretation of three-particle correlation measurements for p - p - p , p - p - Λ and p - d required sophisticated full-fledged calculations to account for the complex few-body dynamics among the particles in the systems. Those measurements evidenced the presence of significant genuine three-body effects. In this contribution I will provide an overview on the results obtained by ALICE in pp collisions at the LHC during the Run 2 data taking and I will present the preliminary Run 3 measurements. The correlation measurements will provide important information on the few-body interaction of hadrons with impact on the equation of state of dense nuclear matter.

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