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## Probing the strong interaction with femtoscopy measurements between charm hadrons and charged particles with ALICE

*Tuesday 8 April 2025 16:50 (20 minutes)*

Studies of strong interactions between hadrons provide a valuable opportunity to test Quantum Chromodynamics at nucleon-scale distances. The femtoscopy technique has proven to be an effective tool for studying interactions between unstable hadrons by measuring the correlation function of hadron pairs in momentum space. This approach offers insights into the interaction between two hadrons, based on the spatial extension of the emitting source. While several measurements of residual strong interactions between light and strange hadrons have been conducted using this technique, studies of charm hadrons have been limited. These studies can shed light on the formation of exotic charm states or, in case of baryons, nuclei with charm content.

In this talk, we will present measurements of residual strong interaction between charm hadrons and light-flavor hadrons using the femtoscopy technique. The final results on the correlation functions and residual strong interactions between D mesons and light mesons measured in pp collisions at  $\sqrt{s} = 13$  TeV will be discussed. Additionally, new studies of correlations between  $\Lambda_c^+$  and protons in pp collisions at  $\sqrt{s} = 13.6$  TeV, utilizing the new data samples collected from LHC Run 3, will be presented.

### Category

Experiment

### Collaboration (if applicable)

ALICE

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**Session Classification:** Parallel session 21

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