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Insights from D-meson femtoscopy using T-matrix calculations

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In this presentation I will unveil our initial findings on D -meson / light-meson femtoscopy. Our analysis employs unitarized effective hadron interactions derived from an off-shell T -matrix calculation in a coupled-channel framework. We have obtained the correlation function of heavy-light mesons accounting for Coulomb interaction in the relevant channels, and have analyzed the impact of inelastic processes. I will present a set of results that can be directly compared with experimental data from the ALICE experiment. These involve net strangeness like D^+K^+ (+ charge conjugate) and D^+K^- (+ charge conjugate) and zero strangeness like $D^+\pi^+$ (+ charge conjugate) and $D^+\pi^-$ (+ charge conjugate). Additionally, our study encompasses predictions involving novel channels involving D_s mesons. Our original research contributes to a deeper understanding of heavy meson-light meson interactions via femtoscopy measurements.

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