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Femtoscopy measurements of the d - Λ system as a tool for studying the strong interaction parameters

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Relativistic heavy-ion collisions provide a way to study the properties of nuclear matter under extreme conditions. One method for investigating the characteristics of bulk matter is the femtoscopy technique. This method allows for the extraction of the space-time characteristics of the expanding fireball produced in heavy-ion collisions and to collect information on the interaction between particles. The correlation between two particles due to the strong interaction can be described by the Lednicky-Lyuboshitz equation, which takes into account two key parameters: the scattering length (f_0) and the effective range (d_0). Systems of particular interest are those where this interaction involves not just one, but two spin states, resulting in a larger set of parameters f_0 and d_0 . Examples of such systems include p - Λ (singlet and triplet states) and d - Λ (doublet and quartet states).

This talk will present the first results of the d - Λ correlation functions in silver ion collisions at 1.58 AGeV measured by the HADES experiment.

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