



ID de la contribución : 12

Tipo : no especificado

Correlation function for the $n\bar{D}_{s0}^*(2317)$ interaction and the issue of elastic unitarity

We study the interaction between a neutron and the $\bar{D}_{s0}^*(2317)$ resonance and look at the amplitude below and slightly above the threshold. The $D_{s0}^*(2317)$ resonance is treated as a molecular state of the DK system with isospin $I = 0$. The interaction is investigated using the Fixed Center Approximation (FCA) to the Faddeev equations, where the DK molecule is taken as the cluster and the neutron as the external particle. We improve the FCA to implement elastic unitarity around threshold, which is needed to obtain scattering parameters and to evaluate the $n\bar{D}_{s0}^*(2317)$ correlation function. This presentation is based on our work published in Phys. Rev. D 112, 094019 (2025).

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Clasificación de la sesión : Saturday morning (Session 4)