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Comparison of molecular and compact states for the $X(3872)$ and the $T_{cc}(3875)$

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The dilemma between molecular states and compact quark states is the subject of a continuous debate in hadron physics. In this talk, based on our recent two works [PLB846,138200 and PRD108,114017] we address the issue of the compositeness of hadronic states for $T_{cc}(3875)$ in the single channel calculation and also an extension to $X(3872)$ in the coupled channel calculation. We develop the general formalism to study the molecular probability, scattering length and effective range. The calculations are presented in several scenarios, also compare with the present experimental information, concluding the unavoidable molecular nature of these two states.

session

C. Hadron Structure

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