Description of three-body scattering for astrophysics

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The three-body reactions are key reactions in the astrophysics, for example, the triple-\(\alpha\) reaction for the \(^{12}\text{C}\) production reaction.\cite{1} In such reactions, the description of three-body scattering is an essential tool to analyze the physical quantities such as cross section and reaction rate. However, the three-body scattering problem is not fully understood in nuclear physics.

In this report, we introduce the simple description for three-body scattering. In our method, the resonant and continuum states are included within the complex scaling method (CSM), and the correlations of the subsystems are reproduced well.\cite{2}

References
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