

Peer Review

Review of: "Universal Wong Formula for Capture Cross Sections from Light to Super-Heavy Systems"

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In this work, an improved formula based on the Wong formula has been proposed for describing the capture cross sections for various fusion systems. An impressive agreement between this improved formula and cross sections measured in different reaction systems has been achieved. This topic is very important, considering that reliable fusion cross sections are very useful for experiments aimed at producing superheavy nuclei, especially new ones. However, I think this manuscript can be improved before publication. I have the following suggestions.

1. Although cross sections from various reaction systems have been used to validate the improved formula, experimental data from the fusion of some light nuclei with ^{238}U are not used, e.g., those from ^7Be , ^{30}Si , and $^{40}\text{Ca} + ^{238}\text{U}$ introduced in Chin. Phys. C 45, 054001 (2021). It would be really nice if this improved formula is compared with more experimental data.
2. There are different models, e.g., HIVAP, CCFULL, and KEWPIE2 (including the WKB approximation and the EBD method), which are also widely used for calculations of fusion cross sections. It may be helpful if the authors can add some discussions between these models and their formula and show some comparisons.

Declarations

Potential competing interests: No potential competing interests to declare.