

Review of: "Approximate Relationships to Reproduce the Values of Shell Correction Energy for Fission Fragments"

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Potential competing interests: No potential competing interests to declare.

The paper discusses approximate relationships to reproduce the values of shell correction energy for fission fragments. Here, the author points out the complexity and limitations of the existing methods of calculating shell correction energy, such as the Strutinsky method and the Wigner-Kirkwood expansion. As a remedy, the author proposes simple linear relationships to estimate the shell correction energy values of fission fragments for several reactions of actinides based on the plots of the shell correction energy over the mass number of fragments. It is claimed that the proposed relationships can reduce the total calculation overhead required for obtaining other nuclear parameters, such as mass yield, total kinetic energy, and excitation energy.

Following the paper, this referee recommends minor revisions to the manuscript before it can be accepted.

1. As the authors provide some linear relationships for the different mass regions, they should mention the accuracy/mean deviation of the obtained fitted equations.
2. The manuscript lacks a discussion of the application of the obtained fitted equations. The author should at least add a brief discussion of the application/ calculation of the other nuclear parameters at the end while providing proper reference(s).

Moreover, here are some minor comments for the grammar/ text correction:

- a. The "Liquid drop model" is abbreviated several times as LDM throughout the manuscript.
- b. The Liquid drop model is introduced twice in the introduction (first and second paragraphs).
- c. On Page 2, the terms FRDL and HFB should be expanded. Here, I think that FRDL is having a typing error, and it should be FRDM or FDLDM.
- d. In the sentence ".....definition, Myers [29] presented the **difference** between the calculated....", should be corrected.
- e. In the sentence ".....the **simplification** expression for nuclear parameters....", should be corrected.