

New Approaches in Nuclear Data Evaluation through Bayesian Machine Learning/ベイズ機械学習による核データ評価の新たなアプローチ

Friday, 15 November 2024 10:20 (30 minutes)

Nuclear data are essential for the research and development of nuclear energy systems and accelerator facilities, and applications involving radioactive isotopes. However, the increasing complexity of theoretical models and the demands of large-scale computations have made sustainable nuclear data evaluation challenging with limited human resources. To overcome these difficulties and continue providing reliable nuclear data, it is crucial to advance nuclear data evaluation methods.

In this talk, I will explore possible solutions to these issues through Bayesian machine learning, using examples from our recent work. [1,2].

References

- [1] H. Iwamoto, S. Meigo, K. Sugihara, “Comprehensive estimation of nuclide production cross sections using a phenomenological approach”, Phys. Rev. C, **109**, (2024), pp. 054610.
- [2] H. Iwamoto, M. Niikura, R. Mizuno, “Comprehensive Bayesian machine learning approach to estimating the total nuclear capture rate of a negative muon”, Phys. Rev. C (submitted).

Primary author: IWAMOTO/岩元, Hiroki/大樹 (JAEA/日本原子力研究開発機構)

Presenter: IWAMOTO/岩元, Hiroki/大樹 (JAEA/日本原子力研究開発機構)

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