

Towards inverse modeling problems in nuclear physics

Monday, 26 August 2019 17:25 (15 minutes)

Recent developments in nuclear potentials based on chiral effective field theory and in various ab-initio approaches have enlarged our microscopic understandings to a wide range of nuclear chart including doubly open-shell nuclei.

However, is it enough to consider only those bottom-up approaches for making reliable predictions about exotic nuclei for which experimental verification is extremely difficult?

In this talk, I will explain importance of so-called “inverse modeling problems” and the preprocessing towards inverse modeling problems, that is, uncertainty quantification of theoretical predictions, by taking recent publications as examples.

1. S. Yoshida, N. Shimizu, T. Togashi, and T. Otsuka, Phys. Rev. C 98, 061301 (R) (2018).
2. S. Yoshida, arXiv:1907.04974.

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Session Classification: Young Scientist Session 3