

Local Bayesian mixture of different occupations for nuclear mass predictions

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Theoretically modelling ground-state properties across the nuclear chart remains an elusive task. While modern theoretical frameworks can predict nuclear masses with root mean square deviation below 600 keV in comparison to experimental data, recent Bayesian model averaging approaches present statistical frameworks to significantly decrease the rms. These Bayesian approaches also provide information about the relative performance of different models in predicting nuclear masses. In this talk, we discuss local Bayesian Dirichlet mixture of different occupations for shell-model mass predictions. We find that introducing new occupations to the mixture generally decreases the rms, and briefly discuss the connection between occupations and theoretical nuclear charge radii.

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