

Computing Masses of Atomic Nuclei

Novel optimization algorithms provide major improvements for models of nuclear structure

- Knowledge of basic nuclear properties of atomic nuclei such as masses is needed in a broad range of applications from nucleo-synthesis to nuclear fission
- Predictions rely on large-scale computer simulations and depend on a few crucial parameters that are adjusted to data
- Sophisticated optimization algorithms taking advantage of the hidden mathematical properties of our models have been developed and significantly improved our models

