
Skyrme Hartree-Fock calculation for keV-nucleon radiative capture reaction in nuclear astrophysics

Bui Minh Loc

Nuclear Physics Division, Advanced Institute of Materials Science, Ton Duc Thang University,
Ho Chi Minh City, Vietnam.

Abstract

The proton and neutron radiative capture reaction and the Skyrme Hartree-Fock calculation are well-known in the past. It is shown in our recent studies that the Skyrme Hartree-Fock calculation can be applied in the study of the proton and neutron radiative capture reaction. The experimental data are successfully reproduced especially at keV energy that is important for the study of nucleosynthesis in nuclear astrophysics. The calculation is fully microscopic and consistent for the bound and scattering problems within the potential model for the radiative capture reaction.
