

Nuclear data evaluation of ^{206}Pb for proton- and neutron-induced reaction in energy region from 20 to 200 MeV

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Nuclear data were evaluated on ^{206}Pb for proton- and neutron-induced reaction in energy region from 20 to 200 MeV. The evaluation was carried out by using the GNASH code system. The ECIS-96 code was adopted for the optical model calculation. The exciton model and the Hauser-Feshbach statistical models were employed for pre-equilibrium process and statistical process calculation, respectively.

For the sequence of this calculation, the optical model calculation with accurate prediction is very important, because the model provides total-reaction cross sections and transmission coefficients required in the statistical and pre-equilibrium model calculation. Thus the optimal optical model potential parameters (OMP) were determined so as to give good agreements with experimental data of elastic scattering and total cross section. The evaluated result of total cross sections is shown in Fig.1 with the measured data. Evaluated results of nucleon production cross sections and spectra reproduce experimental data. We also calculated isotope-production cross sections and these were compared with experimental data and LA150. These results show that the evaluated cross sections give good agreements with experimental data of elastic-scattering, total, and nucleon-production cross sections. However, there was large difference between evaluated and experimental isotope-production cross sections for some residual nuclei.

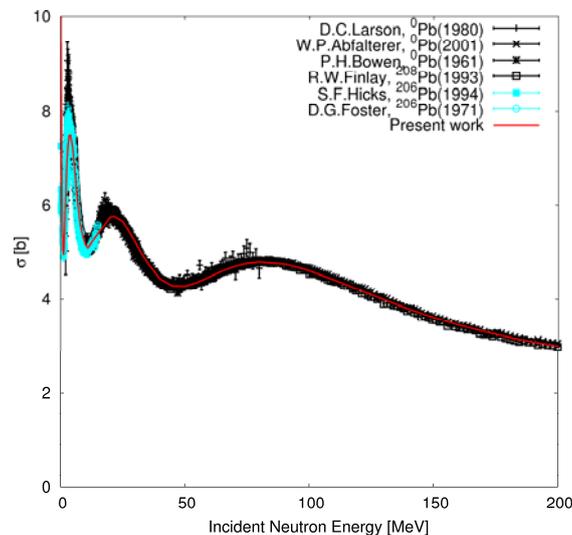


Fig.1 Evaluated results and measured data for neutron-induced total cross sections on ^{206}Pb