

Nuclear Astrophysics at the Canfranc Underground Laboratory, 2nd CUNA Workshop



Contribution ID: 2

Type: **not specified**

Astrophysical production of ^{146}Sm isotope

Astrophysical production of ^{146}Sm isotope

Summary

A possible p-process chronometer could be the ^{146}Sm nucleus and this issue is directly related to the uncertainties of $^{146}\text{Sm}/^{144}\text{Sm}$ production ratio observed in many meteorites and planetary bodies. One of the components of production ratios are the cross sections of type (α, γ) and (α, n) which are leading to the formation of ^{146}Sm and ^{144}Sm isotopes. The (α, γ) and (α, n) cross sections from the threshold up to 15-20 MeV's were obtained. The contributions to the cross sections of direct and pre-equilibrium processes as well as of the compound processes were analyzed. The cross section values obtained in the present evaluations gave new data on α -potentials and nuclear level densities. They were compared with experimental data from the literature.

Primary author: Prof. OPREA, Cristiana (JINR)

Presenter: Prof. OPREA, Cristiana (JINR)