

Calculations of Maxwellian Averaged capture Cross Sections Using the ENDF/B-VII.1, KADONiS, EXFOR and JEFF-3.1 evaluated nuclear reaction data libraries

Y. Djerboua^{1,}, N. Amrani^{1,*}, A. Boucenna¹*

¹Physics Department, Faculty of sciences, UFAS University, Sétif-1, Algeria

*e-mail address: pitchouyoucef@yahoo.fr; naima2073@yahoo.fr

Abstract

We calculate the Maxwellian-averaged cross sections (MACS) of the stellar nucleosynthesis reactions (n,g) using the ENDF/B-VII.1, KADONiS, EXFOR and JEFF-3.1 evaluated nuclear data libraries. The calculated capture cross sections were compared first with the change of database where the nuclear reaction libraries were processed under the same conditions for Maxwellian temperatures (kT) for two cases for 30 keV and for 1420 keV and in the second way between two database one in 30 keV and the other in 1420 keV and finally with a same database library and for different Maxwellian temperatures (kT) of different elements.