

## Effective lifetime of potential waiting-point $^{68}\text{Se}$ in rp-process

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Effective lifetime of a nuclide is the key parameter that can quantitatively estimate the degree of passing this nuclide in rp-process.

The mass of neutron-deficient isotope  $^{70}\text{Kr}$ , which has been directly measured by using  $B\rho$ -defined isochronous mass spectrometry, allows us to re-evaluate the effective stellar half-life of the potential waiting point  $^{68}\text{Se}$  in rp-process under typical type-I x-ray bursts conditions.

With the more accurate mass data of  $^{70}\text{Kr}$ , the effective stellar half-life of  $^{68}\text{Se}$  at both low (typically below 1.5-2 GK) and high (above 1.5-2 GK) temperatures are calculated.

The results show that  $^{68}\text{Se}$  would not be a strong waiting point since its effective lifetime shorter than typical burst time scale of 10-100 s at low temperature, while poses a considerable delay at high temperature where the photodisintegration of  $^{70}\text{Kr}$  can not be negligible in rp-process.

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