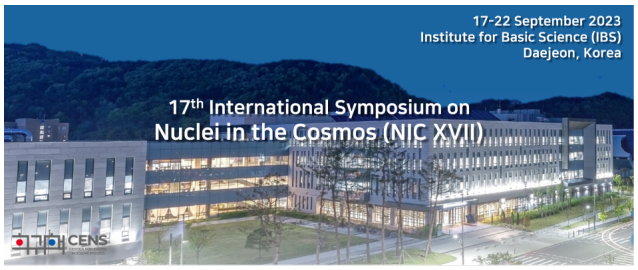

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Sensitivity of r-abundance to the intermediate mass nuclear reactions

Tuesday, 19 September 2023 18:10 (5 minutes)

We investigate the sensitivity of the r-process nucleosynthesis to intermediate-mass nuclear reactions. Many nuclear reactions with neutron-rich nuclei are still uncertain and the r-process sites are not fully understood. We use Meyer's code for the reaction network calculation and update some reaction rates. Then, we calculate the r-process nucleosynthesis in the core-collapsed supernovae for the magnetohydrodynamic (MHD) jet model. The sensitivity of the r-abundance to these reactions is estimated when there is an artificial increase in the thermonuclear reaction rates. We discuss reaction network flows under the various conditions and features of affection of intermediate-mass nuclear reactions to the r-process nucleosynthesis.

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