

Abstract Submitted
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Sensitivity of the r-process to individual beta decay rates¹ REBECCA SURMAN, Union College, J. CASS, G. PASSUCCI, A. APRAHAMIAN, University of Notre Dame — Beta decay rates have long been known to be crucial pieces of nuclear data for calculations of r-process nucleosynthesis. In light of experimental advances that have pushed measurement capabilities closer to the classic r-process path, we revisit the role of individual beta decay rates in a range of potential main r-process scenarios. We consider hot r-processes characterized by (n, γ) - (γ, n) equilibrium and steady beta flow, freezeout from equilibrium, and cold r-processes where (n, γ) - (γ, n) equilibrium is established briefly if at all. We point out the nuclei in each of these scenarios whose beta decay rates have the greatest impact on the overall r-process abundance pattern and describe the mechanisms by which this influence occurs.

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