

Abstract Submitted
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Experimental Constraints on the $^{44}\text{Ti}(\alpha,\text{p})^{47}\text{V}$ Reaction Cross Section Relevant for Supernovae¹ K.A. CHIPPS, Oak Ridge National Laboratory, P. ADSLEY, University of the Witwatersrand/iThemba LABS, M. COUDER, University of Notre Dame, W.R. HIX, Oak Ridge National Lab, Z. MEISEL, Ohio University, K. SCHMIDT, Technische Universitat Dresden — Due to its importance as an astronomical observable in core-collapse supernovae (CCSNe), the reactions producing and destroying ^{44}Ti must be well constrained. Generally, statistical model calculations such as Hauser-Feshbach are employed when experimental cross sections are not available, but the variation in such adopted rates can be large. In the case of the $^{44}\text{Ti}(\alpha,\text{p})^{47}\text{V}$ reaction rate, data from the literature are compared with statistical model calculations of the cross section and used to constrain the possible reaction rate variation over the temperatures relevant to CCSNe. Suggestions for targeted future measurements using a beam of ^{44}Ti and pure helium targets are given.

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Kelly Chipps
Oak Ridge National Lab

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