

Abstract Submitted
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REACLIB: A Reaction Rate Library for the Era of Collaborative Science ZACHARY MEISEL, NSCL at MSU — Thermonuclear reaction rates and weak decay rates are of great importance to modern nuclear astrophysics. They are critical in the study of many topics such as Big Bang Nucleosynthesis, X-ray bursts, Supernovae, and S-process element formation, among others. The Joint Institute for Nuclear Astrophysics (JINA) has been created to increase connectivity amongst nuclear astrophysicists in our modern age of highly collaborative science. Within JINA there has been an effort to create a frequently updated and readily accessible database of thermonuclear reactions and weak decay rates. This database is the REACLIB library, which can be accessed at the web address: <http://www.nscl.msu.edu/~nero/db/>. Here I will discuss the JINA REACLIB Project, including a new procedure to fit reaction rates as a function of temperature that takes full advantage of physicality. With these updated reaction rates, astrophysical modelers will no longer have to worry about the adverse effects of using obsolete reaction rate libraries lacking physical behavior.

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