Abstract Submitted
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Improving LANCE, the ETACHA user interface for the St. George recoil mass separator[1] STEPHANIE TALLMAN, JERRY HINNEFELD, Indiana University South Bend, MICHAEL KURKOWSKI, CHRIS SEYMOUR, MANOEL COUDER, University of Notre Dame — The St. George recoil mass separator at the University of Notre Dame, used to study nucleosynthetic (α,γ) reactions induced by low energy, low Z heavy ions, delivers reaction products in a single charge state to the detection system at its end. The distribution of charge states of reaction products emerging from the helium gas jet target must be known in order to extract the total reaction yield from the yields of the one or two most abundant charge states, which are in practice all that can be measured when the cross section is low. The program ETACHA is used for charge state calculations, and its predictions are compared here to measured distributions for nitrogen and fluorine. LANCE, a code written in python, serves as a front-end that simplifies and automates use of the ETACHA program. Further development of LANCE ensures the viability of ETACHA, particularly in cases where gathering experimental data on charge state distribution is difficult or impossible.

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Jerry Hinnefeld
Indiana University South Bend

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