

Abstract Submitted  
for the HAW09 Meeting of  
The American Physical Society

**Radioactive beams from Californium fission at the CARIBU facility**<sup>1</sup> GUY SAVARD, RICHARD PARDO, SAM BAKER, CARY DAVIDS, DON PETERSON, DON PHILLIPS, RICK VONDRASEK, BRUCE ZABRANSKY, GARY ZINKANN, Argonne National Laboratory — The Californium Rare Ion Breeder Upgrade (CARIBU) of the ATLAS superconducting linac facility aims at providing low energy and reaccelerated neutron-rich radioactive beams to address key nuclear physics and astrophysics questions. These beams are obtained from fission fragments of a 1 Ci  $^{252}\text{Cf}$  source, thermalized and collected into a low-energy particle beam by a helium gas catcher, mass analyzed by an isobar separator, and charge breed to higher charge states for acceleration in ATLAS. The method described is fast and universal and short-lived isotope yield scale essentially with Californium fission yields. Expected intensities of reaccelerated beams are up to  $\sim 5 \times 10^5$  ( $10^7$  at low energy) far-from-stability ions per second on target. Initial commissioning is being performed with weaker 2.5 and 80 mCi sources. Commissioning results, together with the nuclear physics and astrophysics program that will be pursued with the neutron-rich beams made available, will be presented. Plans for installation of the 1 Ci source will be discussed.

<sup>1</sup>This work was supported by the U.S. department of Energy, Office of Nuclear Physics, under contract No. DE-AC02-06CH11357.

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Date submitted: 29 Jun 2009

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