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Mass spectrometry and decay spectroscopy at CARIBU

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A new facility for the production of short-lived neutron-rich isotopes, CARIBU, is now operational at Argonne National Laboratory. CARIBU, the Californium Rare Ion Breeder Upgrade (CARIBU) of the ATLAS superconducting linac facility, provides 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 252Cf source, thermalized and collected into a low-energy particle beam by a large helium gas catcher, mass analyzed by an isobar separator, and charge bred to higher charge states for acceleration in ATLAS. The approach employed at CARIBU is fast and universal and short-lived isotopes are extracted with a yield essentially following the Californium fission distribution. Over 110 neutron-rich species have been extracted and used for experiments so far. The facility will be described and results from measurements at low energy and with reaccelerated beams will be given.

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Primary author: Prof. SAVARD, Guy (Argonne National Laboratory and University of Chicago)

Presenter: Prof. SAVARD, Guy (Argonne National Laboratory and University of Chicago)

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