

Abstract Submitted
for the DNP11 Meeting of
The American Physical Society

Facilitating Precision Mass Measurements at CARIBU¹ DANIEL LASCAR, Northwestern U, JON VAN SCHELT, U of Chicago, GUY SAVARD, ANL, RALPH SEGEL, Northwestern U, JASON CLARK, ANL, KUMAR SHARMA, U of Manitoba, SHANE CALDWELL, U of Chicago, LI GANG, McGill U, MATTHEW STERNBERG, U of Chicago, JOHN GREENE, ANTHONY LEVAND, BRUCE ZABRANSKY, ANL — The Canadian Penning Trap Mass Spectrometer (CPT) has begun a campaign of precision mass measurements of neutron-rich nuclei produced via spontaneous fission of ^{252}Cf as part of the Californium Rare Isotope Breeder Upgrade (CARIBU) to the ATLAS facility at Argonne National Laboratory. As of the time of submission of this abstract, we have measured neutron rich isotopes of Cs, I, Te, Sb, and Sn. CARIBU is currently running with a 60 mCi source of ^{252}Cf which will be upgraded to a 1 Ci source in the future. In order to make this campaign possible, several upgrades to the CARIBU and CPT system were required including a new Radio Frequency Quadrupole (RFQ) ion buncher to CARIBU's low energy beamline, cryogenic cooling of the RFQ Paul trap below the CPT, and an electrostatic elevator to allow for transport of ion bunches from a 50 kV platform to the CPT system's 2 kV beamline. Construction and commissioning of the buncher and modified Paul Trap will be discussed as well as their impact on the measurements in this campaign.

¹Support from U.S. DOE, Nucl Phys Div and NSERC Canada.

Daniel Lascar
Argonne National Laboratory/Northwestern University

Date submitted: 01 Jul 2011

Electronic form version 1.4