Abstract Submitted
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A dedicated ion trap at CARIBU for beta-delayed neutron spectroscopy[1] BARBARA WANG, UC Berkeley, N.D. SCIELZO, LLNL, E.B. NORMAN, UC Berkeley, G. SAVARD, J.A. CLARK, A.F. LEVAND, ANL, A. APRAHAMIAN, U Notre Dame, M. BURKEY, S. CALDWELL, U Chicago, A. CZESZUMSKA, LLNL, S.T. MARLEY, U Notre Dame, G.E. MORGAN, U Manitoba, A. NYSTROM, U Notre Dame, R. ORFORD, McGill U, S.W. PADGETT, LLNL, A. PEREZ GALVAN, ANL, K.S. SHARMA, U Manitoba, K. SIEGL, S. STRAUSS, U Notre Dame — Trapped radioactive ions suspended in vacuum allow for a new way to perform beta-delayed neutron spectroscopy. Decay branching ratios and energy spectra of the emitted neutrons are inferred from a measurement of the nuclear recoil, thereby circumventing the many limitations associated with direct neutron detection. Plans for the development of a dedicated ion trap for experiments using the intense fission fragment beams from the Californium Rare Isotope Breeder Upgrade (CARIBU) facility at Argonne National Laboratory are summarized. The trap design has been guided by experience gained from recent ion-trap experiments measuring $^{137-138,140}$I, $^{134-136}$Sb, and $^{144-145}$Cs. The improved nuclear data that can be collected are needed in many fields of basic and applied science such as nuclear energy, nuclear astrophysics, and stockpile stewardship.

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