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Beta-delayed neutron studies performed with trapped ions BARBARA WANG, A. CZESZUMSKA, Lawrence Livermore National Laboratory, S. CALDWELL, University of Chicago, N. SCIELZO, Lawrence Livermore National Laboratory, J. CLARK, G. SAVARD, Argonne National Laboratory, A. APRAHAMIAN, University of Notre Dame, M. BURKEY, Lawrence Livermore National Laboratory, C. CHIARA, J. HARKER, A. LEVAND, Argonne National Laboratory, S. MARLEY, Louisiana State University, Baton Rouge, G. MORGAN, University of Manitoba, Winnipeg, J. MUNSON, E. NORMAN, University of California, Berkeley, A. NYSTROM, University of Notre Dame, R. ORFORD, McGill University, Montreal, S. PADGETT, Lawrence Livermore National Laboratory, A. PEREZ GALVAN, Argonne National Laboratory, K. SHARMA, University of Manitoba, Winnipeg, K. SIEGL, S. STRAUSS, University of Notre Dame — A detailed study of the beta-delayed neutron (βn) emission properties of ^{135,136}Sb, ^{137,138,140}I, and ^{144,145}Cs was performed at the CARIBU facility by confining ions in the Beta-decay Paul Trap and measuring the decay particles with an array of radiation detectors. Decay branching ratios and energy spectra of the emitted neutrons were inferred from a measurement of the nuclear-recoil time-of-flight, thereby circumventing the limitations associated with direct neutron detection. The isotopes studied have importance in the areas of nuclear energy and r-process nucleosynthesis. The results of this experiment will be presented and compared with direct neutron measurements. In the case of ^{136}Sb, the βn energy spectrum has been measured for the first time.

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