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β-decay and neutron emission studies of r-process nuclei near ^{137}Sb KARL SMITH, Univ. of Notre Dame, F. ATTALLAH, Helmholtzzentrum fur Schwerionenforschung (GSI), T. FAESTERMANN, Technische Universitat Muenchen, U. GIESEN, Univ. of Notre Dame, H. GEISSEL, GSI, M. HANNAWALD, Universitat Mainz, M. HAUSMANN, M. HELLSTROEM, GSI, R. KESSLER, K.-L. KRATZ, Univ. Mainz, Y. LITVINOV, GSI, H. MAHMUD, Univ. of Edinburgh, M.N. MINEVA, Lund Univ., F. MONTES, National Superconducting Cyclotron Laboratory (NSCL), G. MUENZENBERG, GSI, B. PFEIFFER, Univ. Mainz, J. PEREIRA CONCA, NSCL, P. SANTI, Los Alamos National Laboratory, H. SCHATZ, Michigan State Univ., C. SCHEIDENBERGER, K. SCHMIDT, GSI, R. SCHNEIDER, TU München, A. STOLZ, NSCL, K. SUEMMERER, GSI, J. STADLMANN, Universitat Giessen — The β-decays of very neutron rich nuclides in the A=130 region, including the astrophysically relevant nuclei ^{137}Sb, were studied experimentally at the Helmholtzzentrum für Schwerionenforchung (GSI) using a stack of four 500 μm thick double-sided silicon strip detectors in conjunction with the Mainz 4π neutron long counter detector. The system allows the time correlation of ion implant and decay events and the detection of neutrons emitted during the decay. We measured half-lives and branchings for β-delayed neutron emission (P_n values) for a number of nuclei in the region. The impact of our results on various types of models for the astrophysical rapid neutron capture process (r-process) is explored.

Karl Smith
Univ. of Notre Dame

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