Abstract Submitted
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β-decay studies of very neutron-rich Pd and Ag isotopes KARL SMITH, Univ. of Notre Dame, Joint Institute of Nuclear Astrophysics, National Superconducting Cyclotron Laboratory, Helmholtzzentrum fur Schwerionenforschung, S323 / S410 COLLABORATION — The rapid-neutron capture process (r-process) is attributed as the source of nearly half the elements heavier than iron. To gain insight into the r-process nucleosynthesis, uncertainties such as the nuclear physics involved must be minimized. An experiment was performed to measure properties of neutron-rich nuclei just below the $N = 82$ shell closure believed to be responsible for production of the $A = 130$ peak in the solar r-process abundance pattern. β-decay half-lives and neutron branching ratios, P_n values, were measured for Pd and Ag isotopes at the GSI Fragment Separator (FRS). The FRS provided in-flight separation and identification of fission fragments produced by a 900 MeV/u ^{238}U beam. Ions of interest were implanted in the Silicon Implantation detector and Beta Absorber (SIMBA) array. The large pixelation of the array allowed for position-time correlation between implants and the corresponding β-decays. The parent nucleus may decay to an excited state in the daughter, above the neutron separation energy emitting a neutron. These neutrons were moderated and detected in Beta deLayEd Neutron (BELEN) detector surrounding SIMBA. Resulting analysis of half-lives and neutron emission branching ratios including a time-dependent background will be presented.

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