Beta-decay measurements of very neutron-rich isotopes around mass A=130 within the BRIKEN project at RIBF

V. H. Phong\textsuperscript{1,2}, S. Nishimura\textsuperscript{2}, A. Estrade\textsuperscript{3}, G. Lorusso\textsuperscript{4,5}, F. Montes\textsuperscript{6}, O. Hall\textsuperscript{7}, J. Liu\textsuperscript{8}, K. Matsui\textsuperscript{2,9}, and L.H. Khiem\textsuperscript{10} on behalf of the BRIKEN collaboration

\textsuperscript{1}VNU University of Science, Hanoi, Vietnam
\textsuperscript{2}RIKEN Nishina Center, Wako, Saitama, Japan
\textsuperscript{3}Central Michigan University, Mount Pleasant, USA
\textsuperscript{4}National Physical Laboratory, Middlesex, United Kingdom
\textsuperscript{5}University of Surrey, Guildford, United Kingdom
\textsuperscript{6}National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, USA
\textsuperscript{7}University of Edinburgh, Edinburgh, UK
\textsuperscript{8}The University of Hong Kong, Hong Kong
\textsuperscript{9}The University of Tokyo, Tokyo, Japan
\textsuperscript{10}Vietnam Academy of Science and Technology, Ha Noi, Viet Nam

Beta-decays of very neutron-rich isotopes around mass A=130 in the region “southeast” of doubly magic nucleus \(^{132}\text{Sn}\), with particular focus on measurement of beta-delayed neutron emission probability (P\(_n\) value), were studied in the Radioactive Isotope Beam Factory [1] at RIKEN by means of beta-neutron-gamma spectroscopy. In this nuclear region, the gross beta decay properties such as beta decay half-life (T\(_{1/2}\)) and beta-delayed neutron emission probability are important inputs for modeling the astrophysical r-process and provide first access to the nuclear structure information. The isotopes were produced by fragmentation of high intensity \(^{238}\text{U}\) beam on Beryllium target, being separated and identified by the BigRIPS fragment separator and terminated by the implantation of ions into the state-of-art AIDA implantation detector [3], which serves as a highly granular beta-counting system. Subsequent delayed neutrons were detected by the BRIKEN neutron detector array [4] consisted of 140 gas-filled \(^{3}\text{He}\) counter, a world largest beta delayed neutron detector ever built, together with two large volume HPGe clover detectors. The experimental setup allows measurement of T\(_{1/2}\) and P\(_n\) values as well as spectroscopic information from measured delayed gamma-rays of nuclei of interest. In this presentation, the experimental details, the analysis procedure and preliminary results will be provided.