Contribution ID: **370** Type: **Oral**

Recent studies results on neutron-deficient Zn and Ge isotopes

While investigating extremely proton-rich nuclei, one should not neglect the decay channels with beta-delayed-emmision of charged particles. In fact, these decay modes can be very competitive to deexcitation via gamma emission, since the respective Q-value is very large. The study of these charged particle emissions allows for the proper understanding of the nuclear structure in the region and can be relevant for modelling of the astrophysical rp-process [1,2].

Several neutron-deficient Zn and Ge isotopes were produced and investigated in an experiment performed at the National Superconducting Cyclotron Laboratory at Michigan State University. Their decays were studied by means of the Warsaw Optical Time Projection Chamber [3], in collaboration with scientists from JINR-Dubna and the NSCL-MSU. Among the results are first identification of Ge-59, the first information on beta-delayed particle emission of Ge-60 and Zn-58 and the measurement of the cross-section for the most neutron-deficient Ge isotopes [4,5]. The results will be presented and discussed.

[1] H. Schatz et al., Phys. Rep. 294, 167 (199.
[2] B.A. Brown et al., Phys. Rev. C 65, 045802 (2002).
[3] M. Pomorski et al., Phys. Rev. C83, 014306(R) (2011).
[4] A. A. Ciemny et al., Phys. Rev. C92, 014622 (2015).
[5] A. A. Ciemny et al., Eur. Phys. J. A52, 89 (2016).

Primary author: CIEMNY, A. A. (Faculty of Physics, University of Warsaw)

Co-authors: BEZBAKH, A. (Joint Institute for Nuclear Research, Dubna, Russia); KORGUL, A. (Faculty of Physics, University of Warsaw, Warsaw, Poland); CRIDER, B. P. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA); MAZZOCCHI, C. (Faculty of Physics, University of Warsaw, Warsaw, Poland); BAZIN, D. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA); KWAN, E. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA); ZARZYNSKI, F. (Faculty of Physics, University of Warsaw, Warsaw, Poland); KAMINSKI, G. (Joint Institute for Nuclear Research, Dubna, Russia); PEREIRA, J. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA); KOLOS, K. (Department of Physics and Astronomy, University of Tennessee, Knoxville, USA); MIERNIK, K. (Faculty of Physics, University of Warsaw, Warsaw, Poland); RYKACZEWSKI, K. P. (Oak Ridge National Laboratory, Oak Ridge, USA); CWIOK, M. (Faculty of Physics, University of Warsaw, Warsaw, Poland); KUICH, M. (Faculty of Physics, University of Warsaw, Warsaw, Poland); PFÜTZNER, M. (Faculty of Physics, University of Warsaw, Warsaw, Poland); POMORSKI, M. (Faculty of Physics, University of Warsaw, Warsaw, Poland); GRZYWACZ, R. (Department of Physics and Astronomy, University of Tennessee, Knoxville, USA; Oak Ridge National Laboratory, Oak Ridge, US); GO, S. (Department of Physics and Astronomy, University of Tennessee, Knoxville, USA); LIDDICK, S. N. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA; Department of Chemistry, Michigan State University, East Lansing, USA); PAULAUSKAS, S. V. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA; Department of Physics and Astronomy, University of Tennessee, Knoxville, USA); BAUMANN, T. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA); GINTER, T. (National Superconducting Cyclotron Laboratory, MSU, East Lansing, USA); DOMINIK, W. (Faculty of Physics, University of Warsaw, Warsaw, Poland); XIAO, Y. (Department of Physics and Astronomy, University of Tennessee, Knoxville, USA); JANAS, Z. (Faculty of Physics, University of Warsaw, Warsaw, Poland)

Presenter: CIEMNY, A. A. (Faculty of Physics, University of Warsaw)

Track Classification: Experimental Nuclear Physics