Int. Workshop "Shapes and Dynamics of Atomic Nuclei: Contemporary Aspects"
ed. Nikolay Minkov, Heron Press, Sofia 2015

In-Beam Fast-Timing Measurements in Transitional and Triaxially Deformed Ru Isotopes

S. Kisyov[1,2], **S. Lalkovski**[1,3], **D. Ivanova**[1], **N. Mărginean**[2], **D. Bucurescu**[2], **Gh. Căta-Danil**[2], **I. Căta-Danil**[2], **D. Deleanu**[2], **D. Ghiţă**[2], **T. Glodariu**[2], **R. Lica**[2], **R. Mărginean**[2], **C. Mihai**[2], **A. Negret**[2], **C. Niţa**[2], **S. Pascu**[2], **T. Sava**[2], **E. Stefanova**[4], **R. Suvaila**[2], **S. Toma**[2], **O. Yordanov**[4], **N.V. Zamfir**[2]

[1]Faculty of Physics, University of Sofia "St. Kliment Ohridski", 1164 Sofia, Bulgaria

[2]Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), P.O.BOX MG-6, Bucharest - Magurele, Romania

[3]Department of Physics, University of Surrey, Guildford, Surrey GU2 7XH, United Kingdom

[4]Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Science, 1784 Sofia, Bulgaria

Abstract

The ^{99,101,103}Ru isotopes were populated in (α, nγ) reactions. The beam was accelerated to 18 MeV by the 9 MV Tandem accelerator at the Horia Hulubei National Institute, Bucharest, Romania. Half-lives of excited Ru states were measured by using the delayed coincidence technique, described in [1]. The emitted γ-rays were detected by ROSPHERE - a hybrid array consisting of 14 HPGe and 11 $LaBr_3$:Ce detectors. The new experimental data will be discussed and interpreted within the Rigid triaxial rotor plus a particle and the Interacting boson-fermion models.

References

[1] N. Mărginean, D.L. Balabanski, D. Bucurescu, S. Lalkovski, L. Atanasova, G. Căta-Danil, I. Căta-Danil, J.M. Daugas, D. Deleanu, P. Detistov, G. Deyanova, D. Filipescu, G. Georgiev, D. Ghiţă , K.A. Gladnishki, R. Lozeva, T. Glodariu, M. Ivaşcu, S. Kisyov, C. Mihai, R. Mărginean, A. Negret, S. Pascu, D. Radulov, T. Sava, L. Stroe, G. Suliman, and N.V. Zamfir, *European Physical Journal A* **46** (2010) 329-336.

[2] S. Kisyov, S. Lalkovski, N. Mărginean, D. Bucurescu, L. Atanasova, D. L. Balabanski, Gh. Căta-Danil, I. Căta-Danil, J.-M. Daugas, D. Deleanu, P. Detistov, D. Filipescu, G. Georgiev, D. Ghiţă, T. Glodariu, J. Jolie, D.S. Judson, R. Lozeva, R. Mărginean, C. Mihai, A. Negret, S. Pascu, D. Radulov, J.-M. Régis, M. Rudigier, T. Sava, L. Stroe, G. Suliman, N.V. Zamfir, K.O. Zell and M. Zhekova, *Physical Review C* **84** (2011) 014324.