

Structure of ^{81}Ga populated from the β^- decay of ^{81}Zn

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We report on the results of the beta-decay of ^{81}Zn . The experiment was performed at the CERN ISOLDE facility in October 2011, in the framework of a systematic ultra-fast timing [1] investigation of neutron rich nuclei populated in the decay of Zn. Almost pure beams of Zn ions were delivered to our fast-timing station thanks to the use of the ISOLDE RILIS and a cooled quartz transfer line. This allowed the study of beta decay of Zn isotopes ranging from $A = 71$ to $A = 82$. The analysis included beta-gated gamma ray singles and gamma-gamma coincidences from the decay of ^{81}Zn . The new level scheme of ^{81}Ga includes more than 50 new transitions and about 40 new levels in the energy range up to 6400 keV, which extends the previously known structure [2]. The intensities and spin-parity assignments will be discussed together with the preliminary analysis of the level lifetimes.

[1] H. Mach, R.L. Gill, M. Moszynski, Nuclear Instruments and Methods in Physics Research A 280, 49 (1989).

[2] S. Padgett, M. Madurga, R. Grzywacz, I. G. Darby, S. N. Liddick, S. V. Paulauskas, L. Cartegni, C. R. Bingham, C. J. Gross, K. Rykaczewski, D. Shapira, D. W. Stracener, A. J. Mendez, II, J. A. Winger, S. V. Ilyushkin, A. Korgul, W. Królas, E. Zganjar, C. Mazzocchi, S. Liu, J. H. Hamilton, J. C. Batchelder, and M. M. Rajabali, Phys. Rev. C 82, 064314 (2010).

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