

## Nuclear Experiment

# Lifetime measurements in $^{63}\text{Co}$ and $^{65}\text{Co}$

A. Dijon (GANIL), E. Clément (GANIL), G. De France (GANIL), P. Van Isacker (GANIL), J. Ljungvall (GANIL, CSNSM, IRFU), A. Görge (IRFU), A. Obertelli (IRFU), W. Korten (IRFU), A. Gadea, L. Gaudefroy (CEA DIF), M. Hackstein, D. Mengoni, Th. Pissulla, F. Recchia, M. Rejmund (GANIL), W. Rother, E. Sahin, C. Schmitt (GANIL), A. Shrivastava, J.J. Valiente-Dobon, K.O. Zell, M. Zielinska

(Submitted on 14 Jun 2011)

Lifetimes of the  $9/2^-_1$  and  $3/2^-_1$  states in  $^{63}\text{Co}$  and the  $9/2^-_1$  state in  $^{65}\text{Co}$  were measured using the recoil distance Doppler shift and the differential decay curve methods. The nuclei were populated by multi-nucleon transfer reactions in inverse kinematics. Gamma rays were measured with the EXOGAM Ge array and the recoiling fragments were fully identified using the large-acceptance VAMOS spectrometer. The E2 transition probabilities from the  $3/2^-_1$  and  $9/2^-_1$  states to the  $7/2^-$  ground state could be extracted in  $^{63}\text{Co}$  as well as an upper limit for the  $9/2^-_1 \rightarrow 7/2^-_1$   $B(E2)$  value in  $^{65}\text{Co}$ . The experimental results were compared to large-scale shell-model calculations in the  $pf$  and  $pf_{9/2}$  model spaces, allowing to draw conclusions on the single-particle or collective nature of the various states.

Comments: 8 pages, 8 figures, 1 table, accepted for publication in Physical Review C

Subjects: **Nuclear Experiment (nucl-ex)**

Journal reference: Phys.Rev.C83:064321,2011

DOI: [10.1103/PhysRevC.83.064321](https://doi.org/10.1103/PhysRevC.83.064321)

Report number: GANIL P 2011-08

Cite as: [arXiv:1106.2728](https://arxiv.org/abs/1106.2728) [nucl-ex]

(or [arXiv:1106.2728v1](https://arxiv.org/abs/1106.2728v1) [nucl-ex] for this version)

## Submission history

From: Aurore Dijon [[view email](#)]

[v1] Tue, 14 Jun 2011 14:41:37 GMT (1036kb)

[Which authors of this paper are endorsers?](#)

## Download:

- PDF
- PostScript
- Other formats

## Current browse contents:

nucl-ex

[< prev](#) | [next >](#)

[new](#) | [recent](#) | 1106

## References & Citations:

- INSPIRE HEP  
(refers to | cited by)
- NASA ADS

## Bookmark (what is this?)

