



Contribution ID: 74

Type: **Submitted**

186Hg ground state deformation from total absorption studies

Friday, 7 December 2018 12:00 (20 minutes)

Extracting the shape of a nucleus in its ground state when its spin is less than 1 is not possible by a direct measurement of the quadrupole moment. This limits the sources of information available for the study of the ground state shapes of even-even nuclei. Common alternatives are the extraction of the information from electromagnetic transitions along the ground state band or measurements of changes of the nuclear radii along an isotopic chain. Apart from these options, in particular cases it is possible to extract shape information from the distribution of the beta strength in the daughter nuclei [1-5]. This is possible when theoretical calculations predict different patterns of the beta strength distributions depending on the shape.

In this work we will present the analysis of the total absorption measurement of the beta decay of ^{186}Hg performed using the total absorption spectrometer LUCRECIA at ISOLDE. Comparisons with theoretical calculations [6] allow us to infer the shape of this nucleus in its ground state. This result is of particular interest, since ^{186}Hg lies in the region of shape transition [7].

- [1] I. Hammamoto *Z. Phys.* A353 (1995) 145
- [2] P. Sarriguren et al., *Nuc. Phys.* A635 (1999) 13
- [3] E. Náchter et al. *PRL* 92 (2004) 232501
- [4] E. Poirier et al., *Phys. Rev. C* 69 (2004) 034307
- [5] M. E. Estevez et al. *PRC* 92, 044321 (2015)
- [6] O. Moreno, P. Sarriguren *PRC* 73 (2006) 054317
- [7] B. A. Mash et al. *Nature* s41567-018-0292-8

Primary authors: Dr ALGORA, Alejandro (IFIC(CSIC-Univ. of Valencia)); Dr GANIOGLU, Ela (Istanbul University)

Presenter: Dr ALGORA, Alejandro (IFIC(CSIC-Univ. of Valencia))

Session Classification: Low Energy Physics 2