

Spectroscopy of SHE with gamma rays and conversion electrons*

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A growing number of experiments is currently opening up the transfermium region of nuclei for detailed spectroscopic investigations [1]. In the deformed nuclei in the nobelium region this allows an identification and mapping of single particle orbitals closest to the top end of the nuclear chart.

Initial in-beam measurements in the region focussed on γ -ray spectroscopy of even-even nuclei (e.g. $^{252,254}\text{No}$, ^{250}Fm), studying the ground-state yrast bands and allowing extraction of parameters such as the moments of inertia, and proving the deformed nature of these nuclei. More recently, attention has switched to odd-mass nuclei such as ^{253}No , ^{251}Md and ^{255}Lr , the latter being the heaviest nucleus so far studied in-beam. Rotational bands have been observed in all these nuclei. In order to unravel the underlying single particle structure it is crucial to get a better experimental handle on the level schemes than is currently possible with gamma ray spectroscopy alone. The SAGE spectrometer has been built to allow simultaneous in-beam gamma and conversion electron spectroscopy on the heaviest nuclei and is now fully operational.

An overview of the first SAGE campaign will be given.

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[1] R.-D. Herzberg, P.T. Greenlees, Prog. Part. Nucl. Phys. 61, 674 (2008)