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High-K isomeric states in the A~250 region: new isomers in 249,251Md and stability inversion in 250No.

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<P> A century after its discovery, isomerism has proven to be a very fertile tool for the study of nuclear structure, with an important impact on models development. As early as 1973, isomeric states were observed in the A 250 mass region in ²⁵⁰Fm and ²⁵⁴No by Ghiorso et al [1]. This region around Z = 100, N = 152 is characterized by prolate-deformed nuclei with the presence of several high-K orbitals, resulting in an accumulation of high-K isomeric states such as in the even-even ^{250,256}Fm, ^{250,252,254}No, ²⁵⁶Rf, with ^{249,251}Md and ²⁵⁵Lr being the only case in the odd-Z nuclei. These isomers together with other measurements feed and influence the interpretation of heavy nuclei in terms of shell structure. </P>

<P> Indeed, the presence of the isomeric state provides the opportunity to select experimentally a de-excitation path and therefore to access orbitals that would be hardly accessible otherwise. Moreover, the excitation energy of such states is a good test of nuclear models since it strongly depends on the details of single-particle spectra and on generic properties such as pairing correlations and the presence or not of a shell gap. </P>

<P> In this presentation, we will report on recent investigations performed at the University of Jyväskylä. High-K isomers were observed for the first time in ^{249,251}Md [2]. They are interpreted as 3-qp excitations. ²⁵⁰No has long been an enigmatic case with fission having two lifetimes components. This puzzle was solved thanks to digital electronics and has demonstrated that ²⁵⁰No is one of the rare cases with a stability inversion, i.e. an isomeric state whose lifetimes is longer than the ground state [3]. </P>

<P> Comparisons with theoretical calculations will be presented. The systematics of high-K isomer half-lives around N=150 will also be discussed.

[1] A. Ghiorso et al., Phys. Rev. C 7 (1973) 2032
[2] T. Goigoux, Ch. Theisen, B. Sulignano et al., Eur. Phys. J. A 57 (2021) 57
[3] J. Kallunkathariyil, B. Sulignano et al., Phys. Rev. C 101 (2020) 011301(R) </P>

Primary authors: THEISEN, Christophe (CEA Saclay); Dr SULIGNANO, Barbara (CEA/Saclay)

Presenter: THEISEN, Christophe (CEA Saclay)

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