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Isomers in Superheavy Nuclei

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Quasi-particle structure is vital to understanding the stability of the heaviest elements. The alpha decay and fission processes ultimately determine how long a nucleus will survive. Observations in the decay chains of 270Ds suggest that high-K multi-quasiparticle isomeric states can decay via alpha emission where the metastable state is longer lived than the ground state of the same nucleus. Results on 254Rf suggest that high-K isomeric states can have an unprecedented hindrance against fission. Low-lying one-quasiparticle isomers in odd-A superheavy nuclei can have a large influence on the properties of alpha decay chains and lead to ambiguity in their interpretation. Such properties have tremendous implications for how far we may be able to push the experimental studies of the heaviest elements. In this contribution I discuss some of the examples above in more detail and then describe recent efforts to gain a better understanding of alpha decay and fission of metastable states in the heaviest nuclei.

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