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## **E3 decaying isomers and octupole collectivity in the vicinity of $^{208}\text{Pb}$**

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Nuclei in the vicinity of doubly-magic ones often exhibit isomeric states arisen due to the low energies and/or high multiplicities of the gamma rays depopulating them. Around  $^{208}\text{Pb}$  these long-lived states often decay by electric octupole (E3) transitions. Their transition strength give information about their nature. In this region these can be collective, explained by the large number of  $\Delta l = \Delta j = 3$  orbital pairs across  $Z=82$  and  $N=126$ , forming a vibrational phonon with  $B(E3) \sim 35$  W.u. at  $\sim 2.6$  MeV. Or they can be of single-particle nature, connected to the presence of a non-natural parity high  $j$  orbitals in all four shells around  $^{208}\text{Pb}$ . Alternatively, they can be mixed.

This contribution will discuss the structure of nuclei in the vicinity of  $^{208}\text{Pb}$ , with emphasis on isomeric states and the role of octupole collectivity.

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