

Revisiting the octupole collectivity in ^{96}Zr

Wednesday 12 March 2025 17:30 (30 minutes)

Since $N=56$ is one of the so-called “octupole magic numbers”, ^{96}Zr is expected to show a strong octupole collectivity. According to several experiments carried out about 30 years ago to determine the $B(E3; 0_1^+ \rightarrow 3_1^-)$ value, it is one of the largest in the entire nuclear chart. However, the results differ by 30%. We therefore carried out an experiment at ILL in April 2024 to determine the observables required to conclude on the octupole collectivity: the lifetime of the first 3^- state and the branching ratio in its decay. For this purpose, ^{96}Y was produced in a $^{235}\text{U}(\text{n}_{\text{th}}, \text{f})$ fission reaction and subsequently selected by LOHENGRIN. The decay product ^{96}Zr was analysed with a HPGe CLOVER detector, four $\text{LaBr}_3(\text{Ce})$ scintillation detectors and a plastic β -detector in close geometry. The status of the analysis will be presented.

This work was supported by EURO-LABS.

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Session Classification: Day 1

Track Classification: Nuclear structure: Nuclear structure from fast-timing measurements