

Evolution of Collectivity in the Vicinity of Pb-208

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A systematic experimental programme has been started to derive the evolution of quadrupole collectivity near the heaviest stable doubly-magic nucleus Pb-208. Here, $B(E2;0^+ \rightarrow 2^+)$ -values are being measured via relativistic Coulomb excitation. Despite the fact that the energy, $E(2^+)$, and strengths, $B(E2;0^+ \rightarrow 2^+)$, of the first 2^+ state in even-even nuclei is one of the key quantities in nuclear structure physics, surprisingly little is known about the latter in the direct neighbourhood of the heaviest stable doubly-magic nucleus Pb-208.

In October 2012 an experiment was conducted within the PRESPEC-AGATA campaign at the UNILAC-SIS accelerator complex at the GSI Helmholtzcentre for Heavy-Ion Research in Darmstadt, Germany. Following the fragmentation of a 1 AGeV Pb-208 primary beam, heavy Pb, Hg, and Pt secondary beams were prepared by the GSI Fragment Separator and focused onto a gold target foil. Gamma-rays were measured by AGATA and HECTOR, and the outgoing ions were discriminated by the LYCCA detector system.

Results from the ongoing data analysis will be presented and compared to contemporary nuclear structure model calculations.

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