

Abstract Submitted
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Hyperdeformation in the Z=40-60 part of nuclear chart¹ C.W. JANG, A.V. AFANASJEV, J. BEGNAUD, Mississippi State University — Superdeformed shapes are well known in finite nuclei and theory predicts the existence of more elongated shapes. However, the experimental search at high spin for new type of nuclear shapes called hyperdeformed (HD) and characterized by the 3:1 semiaxis ratio has not been successful so far. On the other side, the recent investigation of the very extended shapes in ¹⁰⁸Cd have renewed interest in the study of hyperdeformation. Also, the ridge-structures in 3-dimensional rotational mapped spectra in the A~120 mass region are compatible with features of hyperdeformation [1]. The systematic investigation of the high-spin hyperdeformation in the Z=40-60 has been performed within the framework of the cranked relativistic mean field (CRMF) approach [2]. The calculations have been compared with the experimental data on ridge-structures in the A~120 mass region. General features of this type of nuclear shapes and rotational structures built on top of them will be discussed. Our presentation will also outline the regions of nuclear chart where the search for HD shapes should be concentrated. [1] B. Herskind et al, Phys. Scripta T125, 108 (2006), [2] A. V. Afanasjev et al, Nucl. Phys. 608 (1996).

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