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Nuclear structure of heavy nuclei

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Abstract

The nuclear structure of the superheavy nuclei is investigated systematically by a shell model like approach, i. e. particle-number conserving method in framework of Cranking Shell Model (PNC-CSM). The single-particle level structure, high-K isomers, rotational properties are studied. High-order deformation ε_6 plays an important role both in the single-particle orbitals and in the multi-particle states of the heavy mass region. Particular emphasis will be place on the shell structure in light superheavy nuclear mass region.

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