

Clusterization and quadrupole deformation in nuclei *

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The relation of the quadrupole deformation and the clusterization (including very exotic clusterizations) of atomic nuclei is investigated. A method is presented, which is applicable for the determination of the allowed or forbidden nature of both the binary and the multicluster-configurations in specific nuclear states. It is based on the (real) SU(3) symmetry of light, and on the quasidynamical SU(3) symmetry of heavy nuclei [1], therefore, it acts as a selection rule of the microscopic structure. Applications are performed to the normal, superdeformed, and hyperdeformed states of both light and heavy nuclei [2,3].

Comparison is made with the choice of the optimal clusterizations, based on the Local Potential Model [4], and on the Dinuclear System Model [5].

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