

Investigation of level density parameters of superheavy nuclei

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In our work we defined level density of heavy nuclei with the single-particle spectra using the saddle-point method and based on a superconducting formalism. Calculated energy dependent level density parameter of superheavy nuclei, by fitting the Fermi gas expression with BCS calculations at the ground state and at saddle point, compared with the phenomenological model are presented. The role of the shell and pairing effects on the level density are studied. The extracted level density parameter is represented as a function of mass number and ground-state shell correction.

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