

Investigation of the spin-orbit strengths on the prediction of the closed shells for superheavy nuclei based on Two Center Shell Model

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Using the microscopic-macroscopic approach based on the modified two-center shell model, ground-state shell corrections for even Z superheavy nuclei in the alpha-decay chains containing of $A=295-300,302,304$, $Z=120$ and the low-lying one quasiparticle spectra for ^{251}Cf , ^{243}Cm , ^{255}Fm , ^{243}Bk , and ^{251}Es are calculated and compared with available experimental data. The calculations are successful in describing of low-lying spectra and reveal quite strong shell effects at $Z = 120-126$ and $N = 184$.

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