

Acta Physica Polonica B 2015 vol.46 N3, pages 563-567

Influence of shell structure on level densities of superheavy nuclei

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Abstract

The intrinsic level densities of superheavy nuclei in the α -decay chains of $^{296,298,300}_{120}$ nuclei are calculated using the single-particle spectra obtained with the modified two-center shell model. The level density parameters are extracted and compared with their phenomenological values used in the calculations of the survival of excited heavy nuclei. The dependences of the level density parameters on the mass and charge numbers as well as on the ground-state shell corrections are studied.

<http://dx.doi.org/10.5506/APhysPolB.46.563>
