

European Physical Journal A 2016 vol.52 N12

Level densities of dinuclear systems

Bezbakh A., Shneidman T., Adamian G., Antonenko N., Zhou S.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016, SIF, Springer-Verlag Berlin Heidelberg. The intrinsic level densities of dinuclear systems formed in heavy-ion reactions are calculated using the single-particle spectra obtained with the modified two-center shell model. The role of the mass asymmetry, deformation parameters, and neck size on the level density as well as their quenching with excitation energy are studied. The extracted level density parameter is compared with that obtained in the sudden approximation. The phenomenological parametrization is suggested to estimate the level density parameters for dinuclear systems and strongly deformed nuclear shapes.

<http://dx.doi.org/10.1140/epja/i2016-16353-1>
