

ABSTRACT

Level densities for deformed nuclei

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An important source for level density information about nuclei is tabulating neutron resonances at the neutron binding energy. The density of levels for $L=0$ must be corrected to the total level density by multiplying by a factor to correct for levels of other J values. In general, this is done for the formula derived by Bethe. While this is correct for spherical nuclei, Bethe pointed out that his formula requires an assumption of spherical symmetry. A corrected version of the Bethe formula for deformed nuclei is presented. Results from use of the new formula are presented and compared with those obtained using the Bethe formula. The new formula provides for increased level densities for deformed nuclei.