

ABSTRACT

A critical test of the Oslo method

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Quasicontinuum gamma decay following compound reactions - commonly called Oslo method - is probably the most important source of information on the gamma strength functions (GSFs) and level densities of nuclei below particle threshold. A fundamental assumption in the analysis of Oslo-type data is the generalized Brink-Axel (BA) hypothesis, whose applicability to the low-energy regime is under debate. Since all other methods are based on the measurement of photoabsorption from the ground state, a test of the equivalence of results from absorption and emission experiments in the same nucleus postulated by the BA hypothesis is most important. I will discuss inelastic proton scattering experiments performed at RCNP in extreme forward kinematics, where relativistic Coulomb excitation dominates the cross sections. Such data provide information on the E1 and M1 parts of the GSF and their sum can be directly compared to Oslo-type experiments. Furthermore, the very good energy resolution of the spectra permits an independent extraction of level densities and thereby a test of the normalization methods applied in the analysis of Oslo-type data.

Work supported by the Deutsche Forschungsgemeinschaft under Contract No. SFB 1245 (Project ID No. 79384907).