Int. Workshop “Shapes and Dynamics of Atomic Nuclei: Contemporary Aspects”
ed. Nikolay Minkov, Heron Press, Sofia 2015

Algebraic Collective Model and its Applications

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Abstract

I will review developments and applications of an algebraic version of Bohr’s collective model (BM), known as the algebraic collective model (ACM) within which fully converged calculations can be performed for a range of Hamiltonians. Examining the algebraic structure underlying the BM has clarified its relationship with the interacting boson model (IBM), with which it has related solvable limits. I will review results of comparison of the two models for the case of both axially-symmetric and triaxial rotor. Predictions for single and multi-phonon excitations of deformed nuclei will be discussed and compared with data.