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Study of nuclei north-east of 48Ca with realistic effective hamiltonians

Monday, 21 May 2012 12:00 (20 minutes)

Shell-model calculations for nuclei with valence nucleons outside 48Ca are presented, wherein a fully microscopic approach is adopted. Namely, the single-particle energies and the matrix elements of both the two-body interaction and the electromagnetic multipole operators are derived theoretically starting from the high-precision CD-Bonn nucleon-nucleon potential, renormalized by way of the V-low-k approach. The results compare satisfactorily with a large amount of experimental data. Some remarks are made about the onset of the quadrupole collectivity at N=40.

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