Effects of Core Polarization and Pairing Correlations on Magnetic Moments of Deformed Odd Nuclei

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In self-consistent mean-field approaches to odd-mass nuclei, the time-reversal symmetry of the underlying one-body hamiltonian is broken. This induces a polarization of the even-even core to which the odd nucleon is added. In this talk I will discuss the effect of this polarization on the magnetic moment of the ground state in well-deformed odd-mass nuclei. In addition pairing correlations in these nuclei are quenched for the nucleons in odd number. To take this effect into account, a particle-number conserving approach is necessary (as opposed to HFB or HF+BCS approaches). In this context I will present the Highly Truncated Diagonalization Approach applied to pairing correlations and discuss the first results of intrinsic magnetic moments. Finally, in the framework of the Bohr and Mottelson unified model, the collective contribution to the magnetic moment is calculated from the Hartree-Fock solution of the underlying even-even core. I will present some preliminary results for the total magnetic moment, which are in fair agreement with experimental data.