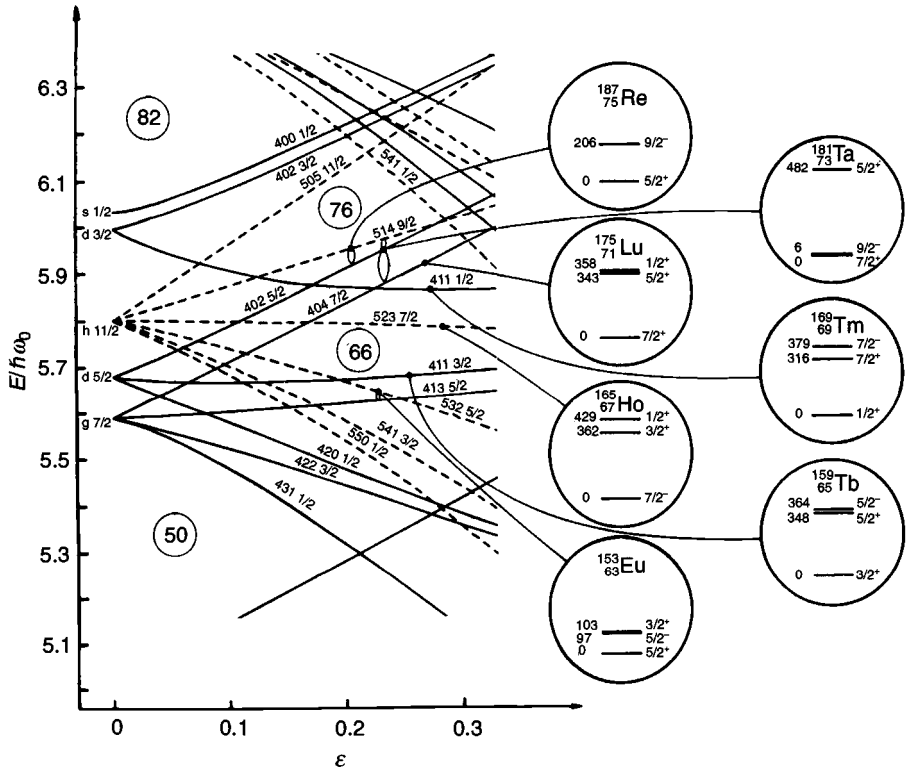

Fig. 11.5. A similar single-particle diagram as in fig. 11.4 with measured band heads of a number of odd-proton rare-earth nuclei to the right. In each case, a rotational band is built on the band heads in a similar way as for ^{165}Tm in fig. 11.4. The orbital of the ground state rotational band is indicated in each case (we are grateful to Sven Åberg who prepared this and the following figure).

will consider a different coupling scheme but, first, we will make some more comparisons between the present formalism and experimental spectra.

For a number of odd-Z nuclei with $Z = 63$–75, we show in fig. 11.5 the measured band heads together with the orbitals of the deformed shell model. On each band head, a rotational band is then built as exhibited for ^{165}Tm in fig. 11.4. The ground state ε-deformation for the nuclei in fig. 11.5 varies roughly as exhibited in the figure with ε being largest around $Z = 70$. In addition the equilibrium ε_4-value varies rather much, being negative for small Z and positive for large Z. This latter variation is not accounted for in fig. 11.5 where $\varepsilon_4 = 0$. In spite of this approximation, all the band head spins and corresponding energies come out more or less as expected from the level order in the deformed shell model.

Fig. 11.6 shows a similar comparison for odd-N nuclei with $N = 93$–107.