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Title: **Shell-model applications to deformed nuclei**

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Large scale shell-model calculations have been very successful in the description of medium-light nuclei. I will review the current status of shell model studies of deformed pf-shell nuclei. A good treatment of the proton-neutron pairing correlations will be shown necessary to obtain the correct moment of inertia of $N = Z$ nuclei. The coulomb energy differences for several mirror pairs will be presented and their relationship with alignment discussed. Finally, I will consider the effect of cross-shell correlations (from the sd-shell to the pf-shell) and his effect on the isotope shifts of calcium and the appearance of rotational bands in ^{36}Ar and ^{44}Ti.

Invited talk.