

ROTATIONAL AND PAIRING PROPERTIES OF ^{74}Rb ¹

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We use a cranked shell-model Monte Carlo (SMMC) approach to study rotational properties and pair correlations in the odd-odd $N=Z$ nucleus ^{74}Rb . The calculation is performed in the complete $1p-0f_{5/2}-0g_{9/2}$ model space with a residual interaction derived from the Paris potential. The calculated ground state is dominated by isovector $J=0$ proton-neutron (pn) pairing. With increasing frequency the $J=0$ pn correlations decrease to a constant value at around $\langle J \rangle = 3 \pm 1.5\hbar$, while the isoscalar pn correlations (mainly $J = 9$) increase. Relatedly, the isospin decreases with frequency from its ground-state value $T = 1$ as isoscalar correlations set in. This finding is in agreement with experiment, where at higher rotational frequency a $T=0$ band becomes energetically favored over the $T=1$ ground-state band.

¹Abstract of published paper: *Phys. Lett. B* **399**, 1 (1997).

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