

. SU(3) limit of SU(6) particle-quadrupole phonon coupling model
and Coriolis coupled Nilsson states

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It is demonstrated that the wave functions of the analogs of Nilsson states obtained for SU(3) limit of SU(6) model in the particle-quadrupole phonon (PTQM) basis have an approximate character of Coriolis coupled Nilsson states¹⁾.

It turns out that the calculated wave functions of the analogs of Nilsson states of particle - phonon representation can be presented in the form

$$|J\rangle_N = \sum_I S_{j,I}^{(J)} |j, I; J\rangle,$$

where $|I\rangle$ represents the wave functions of the states from the ground state band of even core in the SU(6) quadrupole phonon representation. The projection procedure is applied to these wave functions, projecting out components with good K-values. This K-structure is compared with the K-structure of the Coriolis-coupled Nilsson states of particle-rotor model (PRM). As an illustration, we compare the wave functions of the state $|J\rangle_N = |\frac{11}{2}\rangle_N$, for $j = \frac{11}{2}$.

I	0	2	4	6	8	10	% K=J
PTQM	0.491	0.756	0.417	0.118	0.016	0.001	97
PRM	0.491	0.757	0.416	0.112	0.013	0.000	97

1) S.Brant, V.Paar and G.Leander, Phys.Lett., in print