Nuclear Experiment

# Evidence for Shape Co-existence at medium spin in 76Rb

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Four previously known rotational bands in 76Rb have been extended to moderate spins using the Gammasphere and Microball gamma ray and charged particle detector arrays and the 40Ca(40Ca,3pn) reaction at a beam energy of 165 MeV. The properties of two of the negative-parity bands can only readily be interpreted in terms of the highly successful Cranked Nilsson-Strutinsky model calculations if they have the same configuration in terms of the number of g9/2 particles, but they result from different nuclear shapes (one near-oblate and the other near-prolate). These data appear to constitute a unique example of shape co-existing structures at medium spins.

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