

Abstract Submitted
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Evidence for shape coexistence in ^{96}Y ENHONG WANG, J.H. HAMILTON, A.V. RAMAYYA, Vanderbilt University, R. HAN, Peking University, C.J. ZACHARY, J.M. ELDRIDGE, J.K. HWANG, N.T. BREWER, Vanderbilt University, Y.X. LUO, J.O. RASMUSSEN, Lawrence Berkeley National Laboratory, S.J. ZHU, Tsinghua University, G.M. TER-AKOPIAN, YU.TS. OGANESSIAN, Joint Institute for Nuclear Research — The energy levels of neutron rich ^{96}Y have been studied by analyzing the high statistics γ - γ - γ and γ - γ - γ - γ coincidence data from the spontaneous fission of ^{252}Cf at Gammasphere. Twelve new transitions and 9 new levels in ^{96}Y have been identified. Spins and parities are tentatively assigned according to the systematics and energy spacing. A small deformation with near spherical shape is proposed for ^{96}Y ground state. A deformed rotational band has been established at about 1 MeV. Such result indicates shape coexistence of the ^{96}Y nuclei. The results are consistent with the onset of very strong deformation at $N=59$ among Y isotopes. Shell model calculations are performed to explain the energy levels and are found to be in good agreement with experimental data.

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