Abstract Submitted
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Chiral vibrations and collective bands in ^{104}Mo[1] BROOKS MUSANGU, Furman University, E. H. WANG, C. J. ZACHARY, J. H. ELDRIDGE, J. H. HAMILTON, A. V. RAMAYYA, Vanderbilt University, J. O. RASMUSSEN, Y. X. LUO, Lawrence Berkeley National Laboratory, G. M. TER-AKOPIAN, YU. TS. OGANESSIAN, Joint Institute for Nuclear Research, S. J. ZHU, Tsinghua University — High spin states of the neutron-rich ^{104}Mo nucleus which is known to be triaxial have been reinvestigated by analyzing the γ-rays in the spontaneous fission of ^{252}Cf with Gammasphere. Both γ-γ-γ and γ-γ-γ-γ coincidence data were analyzed. A new ΔI=1 band has been discovered. The new band is proposed to have a tentative 5^- band head and form a class of chiral doublets with another 4^- band previously found by our group [1]. Angular correlation measurements have been performed to determine spin and parity of the 4^- chiral band head. The energies of the two sets of chiral bands are very similar to the chiral bands observed in ^{106}Mo [2], e.g. the two 5^- levels in ^{104}Mo are at 2211.9 and 2276.8 keV with ΔE=65 keV and in ^{106}Mo, 1952.4 and 2090.6 keV with ΔE=138 keV [2]. Now at every spin 5^-, 6^-, 7^-, 8^-, the separation energies of the same spin states are about a factor of two smaller than in ^{106}Mo. This indicates even better agreement with expectations for two sets of chiral bands. [1] E.F. Jones et al., Physics of Atomic Nuclei, Vol. 69, 1198 (2006). [2] S.J. Zhu et al., Eur. Phys. J. A 25, 459 (2005).

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