Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Reinvestigation of octupole correlations in ^{146,147}La E.H. WANG, W. LEWIS, C.J. ZACHARY, J.H. HAMILTON, A.V. RAMAYYA, J.K. HWANG, S.H. LIU, 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 — High spin states of neutron rich ^{146,147}La have been reinvestigated by γ-γ-γ and γ-γ-γ-γ coincidence data from a ^{252}Cf spontaneous fission experiment by using Gammasphere. Thirty-two new transitions and seventeen new levels in ^{146}La are observed. Two new bands in ^{146}La have been established. One of them is proposed to be the octupole parity partner of the previously known band. Twenty new transitions and thirteen new levels in ^{147}La are observed. The ground state band of ^{147}La has been established with a proposed $5/2^+$ band-head. Angular correlations of cascades have been used to study the spins and parities of the states. The $B(E1)/B(E2)$ ratios between the proposed octupole bands in ^{146,147}La have been measured showing decreasing octupole deformation from ^{144}La to ^{146}La, and from ^{145}La to ^{147}La. The backbending phenomenon of the four bands in ^{147}La has been studied.

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Date submitted: 14 Jun 2016 Electronic form version 1.4