Oblate deformation in $^{118,119}$Ag

E.H. WANG, J.H. HAMILTON, A.V. RAMAYYA, J.K. HWANG, Vanderbilt University, H.J. LI, Tsinghua University, Y.X. LIU, Huzhou University, Y.X. LUO, Vanderbilt University, J.O. RASMUSSEN, LBNL, Y. SUN, Shanghai Jiao Tong University, S.J. ZHU, Tsinghua University, G.M. TER-AKOPIAN, YU.TS. OGANESSIAN, JINR -- High spin level schemes of $^{118,119}$Ag are established for the first time by analyzing the high statistics $\gamma-\gamma-\gamma$ and $\gamma-\gamma-\gamma-\gamma$ coincidence data from the spontaneous fission of $^{252}$Cf at Gammasphere. Two bands with 12 new levels in $^{118}$Ag and two bands with 13 new levels in $^{119}$Ag have been identified. Spins and parities are tentatively assigned according to the systematics. A total Routhian surface calculation and projected shell model calculation have been performed to understand the behavior of these two nuclei. The calculations indicate oblate shape in $^{118,119}$Ag. The dramatic change of signature inversion point in $^{118}$Ag among odd-odd Ag nuclei needs further theoretical consideration.

Joseph Hamilton
Vanderbilt University

Date submitted: 04 Jun 2015
Electronic form version 1.4