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Strong Warping Effects and Angular Momentum Structures of Topological Insulator WONSIG JUNG, Institute of Physics and Applied Physics, Yonsei University, Seoul, Korea, Y.K. KIM, nstitute of Physics and Applied Physics, Yonsei University, Seoul, Korea, B.Y. KIM, Y.Y. KOH, Institute of Physics and Applied Physics, Yonsei University, Seoul, Korea, M. MATSUNAMI, S. KIMURA, UVSOR Facility, Institute for Molecular Science and The Graduate University for Advanced Studies, Okazaki 444-8585, Japan, M. ARITA, K. SHIMADA, Hiroshima Synchrotron Radiation Center, Hiroshima University, Higashi-Hiroshima, Hiroshima 739-0046, Japan, J.H. HAN, Department of Physics, Sungkyunkwan University, Suwon, Korea, B.K. CHO, School of Physics and Department of materials science and engineering, GIST, Gwangju 500-712, Korea, C. KIM, Institute of Physics and Applied Physics, Yonsei University, Seoul, Korea — We performed angle resolved photoemission (ARPES) studies on Bi2Te3 with circularly polarized light. The the alignment of OAM is found to have a strong binding energy dependence. OAM close to Dirac point has an ideal chiral structure ($\sin\theta$) without out-ofplane component. As the binding energy decreases, warping effect comes in and circular dichroism along the constant energy contour cannot be explained by a simple $\sin\theta$ function but requires a $\sin 3\theta$ term. When the warping effect becomes even stronger near the Fermi energy, circular dichroism has $\sin 6\theta$ symmetry. Such behavior is found to be compatible with the theoretically predicted spin structure.

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[X] Prefer Oral Session
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