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Less than perfect C_{2v} symmetry: loss of mirror plane symmetry in angle-resolved photoemission THOMAS SCOTT, University of Nebraska, Lincoln, KEISUKE FUKUTANI, Department of Physics, University of Nebraska, Lincoln, 68588, USA, HIROKAZU HAYASHI, Graduate School of Science, Hiroshima University, Higashi-Hiroshima 739-8526, Japan, TULA PAUDEL, Department of Physics, University of Nebraska, Lincoln, 68588, USA, EIKE SCHWIER, Hiroshima Synchrotron Radiation Center, Hiroshima University, 2-313 Kagamiyama, Higashi-Hiroshima 739-0046, Japan, TAIKI HORIKE, YORITO NAGATA, Graduate School of Science, Hiroshima University, Higashi-Hiroshima 739-8526, Japan, JIAN JIANG, HIDEAKI IWASAWA, KENYA SHIMADA, Hiroshima Synchrotron Radiation Center, Hiroshima University, 2-313 Kagamiyama, Higashi-Hiroshima 739-0046, Japan, EVGENY TSYMBAL, Department of Physics, University of Nebraska, Lincoln, 68588, USA, YAROSLAV LOSOVYJ, Department of Chemistry, Indiana University, E.Kirkwood Ave Bloomington, IN 47405, PETER DOWBEN, Department of Physics, University of Nebraska, Lincoln, 68588, USA — The effects of lack of in-plane C_2 invariance of the crystal on the angle-resolved photoemission spectra are investigated for Mo(112). The results indicate that, for Mo(112), the absence of C_2 symmetry gives rise to noticeable asymmetry in the ARPES band mapping along the < 1 1 -1> direction. The apparent differences in the experimental band structure in +k versus –k wave vectors can be understood quantitatively in terms of the asymmetries in the electronic bulk band structure, photoelectron diffraction as well as the initial state contribution to the photoemission matrix elements.

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