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Momentum-resolved electronic structure of the superconductor parent compound $BaBiO_3$ N.C. PLUMB, Z. RISTIC, J. PARK, Z. WANG, C.E. MATT, N. XU, Swiss Light Source, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland, B.Q. LV, Beijing National Laboratory for Condensed Matter Physics and Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China, D. GAWRYLUK, E. POMJAKUSHINA, K. CONDER, Laboratory for Developments and Methods, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland, Y. WANG, S. JOHNSTON, Department of Physics and Astronomy, University of Tennessee, Knoxville, Tennessee 37996-1200, USA, J. MESOT, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland, M. SHI, M. RADOVIC, Swiss Light Source, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland — We use *in situ* angle-resolved photoemission to study thin films of $BaBiO_3$, a parent compound of bismuthate superconductors with T_c up to 30 K. By simple electron counting, $BaBiO_3$ should be metallic. However, in analogy with many unconventional and high-T_c superconductor families, it is instead insulating, and superconductivity emerges with doping. Our experiments reveal a folded band structure consistent with known BiO_6 breathing distortions. However, charge ordering often thought to accompany the distortions is virtually nonexistent. The data combined with DFT calculations indicate that states near E_F are primarily oxygen-derived. Hence $BaBiO_3$ appears to be characterized by negative charge transfer energy. This can account for the seeming discrepancy between the atomic structure and "missing" charge order. It should also be relevant for understanding the doping evolution and superconductivity in bismuthates.

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