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Electronic band structure of metallic phase V_2O_3[1] O. KRUPIN, J. DENLINGER, Lawrence Berkeley National Lab, B.J. KIM, RAVI S. SINGH, J.W. ALLEN, University of Michigan — V_2O_3 has an archetypal strongly correlated paramagnetic metallic (PM) phase which becomes insulating with alloying or decreasing temperature. Recent progress has been made experimentally to measure the true bulk V 3d density of states of PM phase V_2O_3 using high-energy angle-integrated photoemission, and theoretically to quantitatively describe the observed prominent quasiparticle peak near E_F using LDA+DMFT. Theoretical predictions of the k-resolved electronic band structure of V_2O_3 have been made, but experimental measurement has proven to be very challenging and elusive. We present intermediate-energy soft x-ray angle-resolved photoemission measurements of the PM-phase V_2O_3 (0001) cleaved surface that reveal for the first time distinct k-resolved band dispersions within the coherent quasiparticle peak and a corresponding three-fold symmetric Fermi surface topology. The agreement of these measurements to theoretical calculations will be discussed.

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