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Electron correlations in the k-dependent electronic structure of metallic V_2O_3[1] O. KRUPIN, J.D. DENLINGER, Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, California, B.J. KIM, J.W. ALLEN, University of Michigan, Ann Arbor, Michigan, P. METCALF, Purdue University, West Lafayette, Indiana — Both the insulator and metal phases of vanadium sesquioxide serve as paradigms of strongly correlated electron physics. The metallic state displays an incoherent lower Hubbard band and a coherent quasiparticle (QP) peak near the Fermi level. Employing angular-resolved photoemission spectroscopy we are making the first studies of the behavior of the QP band in energy-momentum space. Here we report on electron mass renormalization near the Fermi level, and higher energy kink and "waterfall" features such as have been reported for different families of superconducting cuprates. Owing to a variety of coexisting interactions the precise origin of these features remains controversial and is presently actively discussed in the literature. Observation of these features in a paradigm system broadens the basis for discussing and assessing various suggested scenarios.

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