

Abstract Submitted
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The band structure of VO₂ measured by angle-resolved photoemission¹ LUCA MORESCHINI, Advanced Light Source, YOUNG JUN CHANG, ALS and Fritz-Haber Institut, DAVIDE INNOCENTI, ALS and University of Rome-Tor Vergata, ANDREW L. WALTER, ALS and FHI, YOUNG SU KIM, GEOFFREY GAINES, AARON BOSTWICK, JONATHAN DENLINGER, ELI ROTENBERG, ALS — The origin of the 340K metal-insulator transition (MIT) in VO₂ is still under debate. The main reason is that no direct experimental verifications of the electronic structure of VO₂ exist up to this point. The quality of the available single crystals is not sufficient for ARPES measurements, so that photoemission is limited to angle-integrated mode. New opportunities are offered by oxide films, on which data of equal or even higher quality have been reported (Saeki *et al.*, PRB 2009). With the *in situ* pulsed-laser-deposition (PLD) system available on beamline 7.0.1 at the Advanced Light Source we have grown VO₂(001) films on a TiO₂ substrate and measured the Fermi surface of the metallic phase. These results will permit a direct comparison with the existing band calculations and open the way to the study of the MIT as a function, e.g., of film thickness or electron doping with Cr.

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