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Magneto-optical studies of high-T_c cuprates in 33 Tesla S.V. DORDEVIC, The University of Akron, A. GOZAR, I. BOZOVIC, C.C. HOMES, G.D. GU, W. SI, Brookhaven National Lab, Y.J. WANG, National High Magnetic Field Laboratory — We will report results of our magneto-optical studies of high-T_c cuprates in high magnetic field. An optimally doped LSCO thin film with thickness of 78 nm and $T_c = 41$ K was studied in transmission geometry with magnetic field of 33 Tesla. The measurements have been performed in the mid-IR part of the spectrum, and at temperatures both below and above Tc. In addition, several other cuprates families, such as YBCO, Bi2212, LBCO and NCCO, have been studied in reflection geometry, with magnetic field of 18 Tesla applied perpendicular to CuO_2 planes. In all studied samples we find extreme insensitivity of optical properties to external magnetic field. The results will be discussed in the context of existing theoretical models.

S.V. Dordevic
The University of Akron

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