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Infrared and visible magneto-optical studies of centimeter-scale monolayer MoS_2 MUMTAZ MURAT ARIK, ALOK MUKHERJEE, JUNGRYEOL SEO, CHUAN ZHAO, PAYAM TAHERI, BRETT BLIZZARD, HAO ZENG, JOHN CERNE, State Univ of NY - Buffalo — We report extensive magneto-optical measurements on monolayer MoS2 at temperatures down to 10K and magnetic fields up to 7T. The centimeter-scale monolayer MoS2 films are grown by the vapor transport method, where a 5 Å-thick pre-deposited MoO3 film is sulfurized. We measure polarization-sensitive transmission, reflection, photoluminescence, and Kerr response in the infrared and visible range (0.100 – 2.75 eV). We explore the dependence of the optical and electronic properties on the substrate. This work is supported by NSF-DMR1410599 and NSF CBET-1510121.

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