

Abstract Submitted
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Optical and magneto-optical study of topological insulators Bi_2Te_3 and Sb_2Te_3 S.V. DORDEVIC, The University of Akron, H. LEI, C. PETROVIC, Brookhaven National Laboratory, J. LUDWIG, D. SMIRNOV, National High Magnetic Field Laboratory — We have studied electro-dynamical properties of topological insulators Bi_2Te_3 and Sb_2Te_3 with the goal of elucidating their electronic structure. Optical and magneto-optical properties of bulk samples of Bi_2Te_3 and Sb_2Te_3 will be reported over a broad range of frequencies (from far-infrared to near ultraviolet), temperatures (from room temperature to 4.2 K) and magnetic fields (from zero to 18 Tesla). The spectra reveal strong magneto-optical activity in both Bi_2Te_3 and Sb_2Te_3 , especially around the plasma minimum in reflectance. From the data we extract some important parameters of charge dynamics, such as carrier mobility and effective mass. The results will be compared and contrasted with similar results on Bi_2Se_3 .

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