

Abstract Submitted  
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**Infrared studies of topological insulators  $\text{Bi}_2\text{Te}_3$ ,  $\text{Sb}_2\text{Te}_3$  and  $\text{Bi}_2\text{Se}_3$**  S.V. DORDEVIC, M.S. WOLF, The University of Akron, N. STOJILOVIC, University of Wisconsin Oshkosh, HECHANG LEI, C. PETROVIC, Brookhaven National Lab — In this study we have used infrared spectroscopy to probe the electrodynamic response of topological insulators  $\text{Bi}_2\text{Te}_3$ ,  $\text{Sb}_2\text{Te}_3$  and  $\text{Bi}_2\text{Se}_3$ . Infrared spectra are collected over a broad frequency and temperature range. The results reveal similar spectra in all three compounds, with well defined plasma edge located in the far-infrared part of the spectrum. However there are some important differences in the temperature evolution of the spectra. Namely, as temperature decreases the plasma edge shifts to lower frequencies in  $\text{Bi}_2\text{Se}_3$ , whereas in  $\text{Bi}_2\text{Te}_3$  and  $\text{Sb}_2\text{Te}_3$  it shifts to higher frequencies.

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