

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Longitudinal and spin/valley Hall optical conductivity in single layer MoS₂ ZHOU LI, JULES CARBOTTE, McMaster University — A monolayer of MoS₂ has a non-centrosymmetric crystal structure, with spin polarized bands. It is a two valley semiconductor with direct gap falling in the visible range of the electromagnetic spectrum. Its optical properties are of particular interest in relation to valleytronic and possible device applications. Circular polarized light associated with each of the two valleys separately is considered and results are filtered according to spin polarization. Temperature can greatly change the spin mixture seen in the frequency window where they are not closely in balance.

- [1] Zhou Li and J. P. Carbotte, submitted to Phys. Rev. B.
- [2] D. Xiao et.al, Phys. Rev. Lett. 108,196802 (2012).

Zhou Li
McMaster University

Date submitted: 12 Nov 2012

Electronic form version 1.4