

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Casimir effect and radiative heat transfer between Chern Insulators¹ PABLO RODRIGUEZ LOPEZ, LPTMS, CNRS et Univ de Paris - Sud, ADOLFO GRUSHIN, Max-Planck-Institut für Physik komplexer Systeme, WANG-KONG TSE, DIEGO DALVIT, Theoretical Division MS B213, Los Alamos National Laboratory — Chern Insulators are a class of two-dimensional topological materials. Their electronic properties are different from conventional materials, and lead to interesting new physics as quantum Hall effect in absence of an external magnetic field. Here we will review some of their special properties and, in particular, we will discuss the radiative heat transfer and the Casimir effect between two planar Chern Insulators sheets. Finally, we will see how to control the intensity and sign of this Casimir force and the requirements to observe a repulsive Casimir force in the lab with those materials.

¹The research leading to these results has received funding from the People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme (FP7/2007-2013) under REA grant agreement no. 302005.

Pablo Rodriguez Lopez
LPTMS, CNRS et Univ de Paris - Sud

Date submitted: 13 Nov 2014

Electronic form version 1.4