Massachusetts Institute of Technology
Department of Physics

Condensed Matter Theory Seminar

"Chiral Anomaly and Classical Negative Magnetoresistance of Weyl Metal"

Boris Spivak, University of Washington

Abstract: I will present a theory of magnetotransport phenomena related to the chiral anomaly in Weyl semimetals. It will be shown that conductivity, thermal conductivity, thermoelectric and the sound absorption coefficients exhibit strong and anisotropic magnetic field dependences. In the presence of a magnetic field the Wiedeman-Franz law in these materials can be violated. I will also discuss the properties of magneto-plasmons and magneto-polaritons, whose existence is entirely determined by the chiral anomaly. Finally, we will discuss the conditions of applicability of the quasi-classical description of electron transport phenomena related to the chiral anomaly.

2:00pm
Friday, November 18, 2016
Duboc Room (4-331)

Host: Leonid Levitov