



Mathematics and CS Seminar

Chiral anomaly, topological field theory, and novel states of matter

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Host: Laszlo Erdős

Starting with a description of the goals of the analysis and a brief survey of the chiral anomaly, I will review some basic elements of the theory of the quantum Hall effect in 2D electron gases. I will discuss the role of anomalous chiral edge currents and of anomaly inflow in 2D insulators with explicitly or spontaneously broken parity and time reversal, i.e., in incompressible Hall fluids and Chern insulators, respectively. The topological Chern-Simons actions yielding the correct response equations for the 2D bulk of such materials will be exhibited. I will then analyze chiral edge spin-currents and the bulk response equations in time-reversal invariant 2D topological insulators. A short digression into the theory of 3D topological insulators, including axionic insulators, will conclude this talk.

Tuesday, April 24, 2018 03:00pm - 05:00pm

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)



This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.