



Department of  
Theoretical Physics

# THE QUANTUM SPACETIME SEMINAR SERIES

## Anomalous transport at weak coupling



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**Date:** October 12, 2015

**Time:** 11.30 am

**Venue:** A-304, TIFR

(Duration and Location are subject to irreducible jitter)

Recent investigations has shown that the presence of quantum anomalies in the microscopic theory modify macroscopic hydrodynamic equations of the theory. We use perturbative methods of finite temperature field theory to derive transport coefficients sensitive to the anomalies of the microscopic theory. This is a complementary and a direct method to that which relies on symmetries and the 'consistency of the Euclidean vacuum'. Using the direct method we show how, and in which cases the approach using the 'consistency of the Euclidean vacuum' breaks down. Finally we show that in the presence of anomalies in 1+1 dimensional Weyl gas, the charge dispersion mode acquires a speed which is equal to half the speed of light.