PHYSIKALISCHES KOLLOQUIUM

Wintersemester 2022/23

Das Kolloquium findet (soweit nicht anders angegeben) **jeweils montags um 17:15 Uhr in Präsenz im Röntgen-Hörsaal des Physikalischen Instituts, Hubland Campus Süd, Universität Würzburg und online via Zoom statt.**

Link zum Zoom-Raum:
https://go.uniwue.de/physkolloqzoom

28.11.2022

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Anomalies (in) matter

Abstract

Symmetry is a key concept in physics. Some symmetries exist however only in the classical world and cannot be realized in the quantum theory. When this happens, we speak of a (quantum) anomaly. The most prominent examples are the triangle anomalies arising the quantum field theory of chiral fermions. In particle physics they explain the short lifetime of the neutral pion, give rise to consistency conditions on gauge theories and allow powerful insight into the low energy dynamics. Over the last decade that anomalies also give rise to new and dissipationless transport phenomena in hot and dense relativistic matter, the so-called chiral magnetic and chiral vortical effects. I will review this anomalous transport theory and then discuss how it can be applied to the electronics of Weyl semimetals.

Für die Dozentinnen bzw. Dozenten der Fakultät

PD. Dr. Meyer, Prof. Dr. Assaad, Dr. Feichtner und Hr. Kögel