

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>



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Topological hyperbolic matter

Abstract

Hyperbolic lattices correspond to regular tessellations of the sheet of constant negative curvature, called hyperbolic plane. Projections of hyperbolic lattices prominently appeared in the artwork of M. C. Escher and were popularized by the mathematician Harold Coxeter. In contrast with the positively curved surface, i.e. sphere, Hilbert's theorem ensures that hyperbolic plane cannot be (isometrically and smoothly) immersed inside our everyday Euclidean space. Despite this obstacle, physical models on hyperbolic lattices were recently realized with coupled microwave resonators and in electric-circuit networks. This experimental progress has also inspired the search for a hyperbolic generalization of Bloch's band theory, with the hallmark discovery that momentum space of two-dimensional hyperbolic lattices is four- (or higher-) dimensional. In this colloquium talk I will shed light on these recent advancements and discuss their implications for topological phases of hyperbolic matter.

Für die Dozentinnen bzw. Dozenten der Fakultät

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