Upcoming Events

Colloquium

Topic: tba

Date: 08.06.20

Time: 16:15

Place: cyberspace

Guest: Prof. Dr. Tetyana Galatyuk

TU Darmstadt

Abstract:

Contact person: F. Karsch/TR211

Colloquium Mathematical Physics

Topic: Numerics for resonances of Schottky surfaces

Date: 10.01.20

Time: 16:15

Place: V3-201

Guest: Anke Pohl

Universität Bremen
Resonances of Riemannian manifolds are of great importance in many areas of mathematics and physics. Even though many fascinating results about these spectral entities have already been found, an enormous amount of their properties, also some very elementary ones, is still undiscovered. A few years ago, by means of numerical experiments, Borthwick noticed for some classes of Schottky surfaces (certain hyperbolic surfaces of infinite area) that their sets of resonances exhibit unexpected and nice patterns, which are not yet fully understood. After a survey of some parts of this field, we will discuss an alternative numerical method, combining tools from dynamics, zeta functions, transfer operators and thermodynamic formalism, functional analysis and approximation theory. This is joint work with Oscar Bandtlow, Torben Schick and Alexander Weiße.

Contact person: M. Baake

Seminar High Energy Physics

Topic: Chiral charge dynamics in Abelian gauge theories at finite temperature

Date: 18.02.20

Time: 15:15

Place: D6-135

Guest: Adrien Florio

EPFL Lausanne

The chiral anomaly present in the standard model can have important phenomenological consequences, especially in cosmology and heavyions physics. In this talk, I will focus on the contribution from the Abelian gauge fields. Despite an absence of topologically distinct sectors, they have a surprisingly rich vacuum dynamics, partly because of the chiral anomaly. I will present results obtained from real-time classical lattice simulations of a U(1) gauge field in the presence of a chiral chemical potential. They account for short distance fluctuations, contrary to effective descriptions such as Magneto-Hydrodynamics (MHD). I will discuss various phenomena, like inverse magnetic cascade, which occur in this system. In particular, in presence of a background magnetic field, the chemical potential exponentially decays. The associated chiral decay rate is related to the diffusion of the Abelian Chern-Simons number in a magnetic background, in the absence of chemical potential. The rate obtained from the simulations is an order of magnitude larger than the one predicted by MHD. If this result is shown to be robust under corrections such as Hard Thermal Loops, it will call for a revision of the implications of fermion number and chiral number non-conservation in Abelian theory at finite temperature.
Seminar Condensed Matter

Topic: Kitaev model striped to its basics

Date: 07.05.20
Time: 12:53
Place: D5-153
Guest: Stephen Winter
Frankfurt University

Abstract:

Contact person: Jürgen Schnack

Seminar Mathematical Physics

Topic: TBC

Date: 07.05.20
Time: 16:00
Place: ZOOM / Konferenzschaltung
Guest: Leslie Molag
Uni Bielefeld

Abstract: TBC
Contact person: Gernot Akemann

Seminar AG Zufallsmatrizen

Topic: TBC - 27 May 2020, 0900 hrs

Date: 27.05.20

Time: 09:00

Place: ZOOM / Konferenzschaltung

Guest: Mario Kieburg

University of Melbourne

Abstract: TBC

Contact person: Gernot Akemann