Aktuelle Veranstaltungen

Kolloquium

Thema: **Shine a light! When matter shatters**

Datum: 08.06.20

Uhrzeit: 16:15

Ort: cyberspace

Vortragender: **Prof. Dr. Tetyana Galatyuk**

TU Darmstadt

Inhalt: The microscopic properties of strong-interaction matter under extreme conditions of temperature and density is a topic of great interest. Matter in equilibrium radiates photons with a thermal spectrum revealing its temperature in the slope of the energy distribution. This is generalized for virtual photons, which materialize after a short time by creation of a pair of charged leptons (dileptons), for which their invariant mass takes the role of the energy as observable. In contrast to the case of photons, their spectral distribution is not affected by a blue (or red) shift. Moreover, dileptons offer the unique opportunity also to directly monitor in-medium electromagnetic spectral functions. Hence, dilepton spectra from strong-interaction medium reflect not only its temperature but also are sensitive to possible effects of a restoration of the spontaneously broken chiral symmetry. This talk will discuss important experimental results obtained so far at various facilities and the latest theoretical developments on emissivity of matter.

Ansprechpartner: F. Karsch/TR211

Kolloquium Mathematische Physik

Thema: **Numerics for resonances of Schottky surfaces**

Datum: 10.01.20
Inhalt:

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.

Ansprechpartner: M. Baake

Seminar Hochenergiephysik

Chiral charge dynamics in Abelian gauge theories at finite temperature

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

Datum: 18.02.20

Uhrzeit: 15:15

Ort: D6-135

Vortragender: 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
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The chiral anomaly present in the standard model can have important phenomenological consequences, especially in cosmology and heavy ions 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.

Ansprechpartner: S. Schlichting

Seminar Kondensierte Materie

Thema: Kitaev model striped to its basics

Datum: 07.05.20

Uhrzeit: 12:53

Ort: D5-153

Vortragender: Stephen Winter

Frankfurt University

Inhalt:

Ansprechpartner: Jürgen Schnack

Seminar Mathematische Physik

Thema: TBC

Datum: 07.05.20

Uhrzeit: 16:00
Seminar AG Zufallsmatrizen

Thema: TBC - 27 May 2020, 0900 hrs

Datum: 27.05.20

Uhrzeit: 09:00

Ort: ZOOM / Konferenzschaltung

Vortragender: Mario Kieburg

University of Melbourne

Inhalt: TBC

Ansprechpartner: Gernot Akemann