Aktuelle Veranstaltungen

Kolloquium

Thema:  
Shine a light! When matter shatters

Datum:  
08.06.20

Uhrzeit:  
16:15

Ort:  
eyberspace

Vortragender:  
Prof. Dr. Tetyana Galatyuk

TU Darmstadt

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:  
The problem of latency in estimating the Covid-19 replication number

Datum:  
08.05.20
Uhrzeit: 16:15

Ort: ZOOM/Konferenzschaltung

Vortragender: Lorenzo Sadun

University of Texas at Austin

Figuring out how to restart the world's economy without a resurgence of disease depends on understanding how contagious Covid-19 really is. However, estimates of the basic replication number $R_0$ vary greatly, with well-respected groups publishing estimates whose 95% confidence intervals don't even overlap. In this talk I'll go over the basic SIR and SEIR models of disease spread and present several different ways to treat the latency period between being exposed and becoming infectious. Simple SEIR models are unstable; working with a fixed set of data, small changes to the model can result in large changes to the estimated value of $R_0$. More realistic models are more complicated and are even less stable. The upshot is that we know much less about $R_0$ than is generally believed, and the error bars on the high side are particularly large. Containing the outbreak for an extended period may be a lot harder than our leaders think.

Ansprechpartner: Gähler, Dr. Franz

Seminar Hochenergiephysik

**Hydrodynamic attractors, initial state energy and particle production in relativistic nuclear collisions**

Thema: Hydrodynamic attractors, initial state energy and particle production in relativistic nuclear collisions

Datum: 19.05.20

Uhrzeit: 14:15

Ort: cyberspace

Vortragender: Aleksas Mazeliauskas

CERN

The loss of information in a thermalizing system manifests itself as production of entropy. In relativistic nuclear collisions the final state entropy is proportional to the number of produced particles and therefore the measured particle multiplicities probe
the entropy produced during the non-equilibrium evolution of quark-gluon matter. Thanks to the recent understanding of off-equilibrium dynamics using the concept of hydrodynamic attractors, we were able to establish a general relation between the initial state energy and the produced particle multiplicities in high-energy nuclear collisions. References: https://doi.org/10.1103/PhysRevLett.123.262301 https://doi.org/10.1103/PhysRevC.100.064903

Ansprechpartner: S. Schlichting

Seminar Kondensierte Materie

22-05-2020-14.15 hrs - D5-153 - Construction of tight binding models from ab initio calculations using maximally localized Wannier functions

Datum: 22.05.20

Uhrzeit: 14:15

Ort: D5-153

Vortragender: Thomas Benkenstein

Universtität Bielefeld

Inhalt:

Ansprechpartner: Thomas Dahm

Seminar Mathematische Physik

Thema: Statistics of Extremes in Eigenvalue-counting Staircases

Datum: 04.06.20

Uhrzeit: 16:00

Ort: ZOOM / Konferenzschaltung
Vortragender: Yan Fyodorov

King's College London

Inhalt:
We consider the counting function (“spectral staircase”) for eigenvalues of a random unitary matrix, drawn from the corresponding beta-ensemble. Our goal is to characterize the statistics of maximum deviation of this staircase from its mean slope in a fixed interval, when size of the matrix $N \gg 1$. We will show that one-sided extremes can be addressed by exploiting a mapping onto the statistical mechanics of log-correlated random processes and using an extended Fisher-Hartwig conjecture. The resulting statistics exhibits combined features of counting statistics of Fermions with Sutherland-type interaction and extremal statistics of the fractional Brownian motion with Hurst index $H = 0$. Some of the features are expected to be universal. The talk is based on the paper Fyodorov-Le Doussal arXiv:2001.04135.

Ansprechpartner: Gernot Akemann

Seminar AG Zufallsmatrizen

Thema: >>> 0900 hrs <<< TBC

Datum: 24.06.20

Uhrzeit: 09:00

Ort: ZOOM / Konferenzschaltung

Vortragender: Gaultier Lambert

Universität Zürich

Inhalt: TBC

Ansprechpartner: Gernot Akemann