<table>
<thead>
<tr>
<th>Thema: Phases of QCD: a lattice perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Datum: 01.02.21</td>
</tr>
<tr>
<td>Uhrzeit: 16:15</td>
</tr>
<tr>
<td>Ort: cyberspace</td>
</tr>
<tr>
<td>Vortragender: JProf. Francesca Cuteri</td>
</tr>
<tr>
<td>Goethe-Universität Frankfurt</td>
</tr>
<tr>
<td>Ansprechpartner: F. Karsch/TR211</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thema: 15/01/2021 - TBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Datum: 15.01.21</td>
</tr>
<tr>
<td>Uhrzeit: 16:15</td>
</tr>
<tr>
<td>Ort: ZOOM/Konferenzschaltung</td>
</tr>
<tr>
<td>Vortragender: Simone Warzel</td>
</tr>
<tr>
<td>Technical University of Munich</td>
</tr>
</tbody>
</table>
Inhalt: TBC

Ansprechpartner: G. Akemann

Seminar Hochenergiephysik

Thema: Quantum computing quantum field theory problems

Datum: 15.12.20

Uhrzeit: 14:15

Ort: cyberspace

Vortragender: Niklas Mueller

BNL

I will present an overview over the exciting field of quantum computation from a high energy / nuclear theory perspective (No hardware, sorry!). After a brief but pedagogical introduction into the basic concepts, and into some of the interesting physics problems, I will try to explain what “quantum computing” a (lattice) field theory problem actually requires one to do: from digitizing the Hilbert space of ones favorite theory to coming up with an algorithm including preparing states and extracting information by measurement. As an example, I will mostly focus on quantum computation of a dynamical problem (scattering) in scalar phi^4 theory, and will be contrasting the current state-of-the-art approach by Jordan, Lee and Preskill with one we are currently developing. I might talk about quantum computation/simulation of gauge theories, if time permits.

Ansprechpartner: S. Schlichting

Seminar Kondensierte Materie

Thema: Evaluation der Genauigkeit des Tschebyscheff-Algorithmus zur Bestimmung thermodynamischer Funktionen am Beispiel einer Heisenberg-Spin-Leiter

Datum: 11.09.20
Uhrzeit: 14:00
Ort: ZOOM / Konferenzschaltung
Vortragender: Henrik Schlüter
Universität Bielefeld


Ansprechpartner: Jürgen Schnack

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 >>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.
Seminar Bielefeld-Melbourne Zufallsmatrizen

Thema: **Gaussian alpha ensemble and an application to Toda lattice**

Datum: 09.12.20

Uhrzeit: 09:00

Ort: ZOOM / Konferenzschaltung

Vortragender: **Guido Mazzuca**

SISSA, Trento

In my talk I will introduce a tridiagonal random matrix models related to the classical Gaussian \( \beta \)-ensemble in the high temperature regime, i.e. when the size \( N \) of the matrix tends to infinity with the constraint that \( \beta N = 2 \) constant, \( \beta > 0 \). I will show how to explicitly compute the mean density of states and the mean spectral measure for this ensemble. Finally, I will apply this result to compute the mean density of states for the periodic Toda lattice in thermal equilibrium. This talk is based on my recent preprint “On the mean Density of States of some matrices related to the beta ensembles and an application to the Toda lattice”, arXiv preprint:2008.04604, and partly on a joint work with T. Grava, A. Maspero, and A. Ponno “Adiabatic invariants for the FPUT and Toda chain in the thermodynamic limit”, Communications in Mathematical Physics, 380 (2020), pp. 811–851. DOI: 10.1007/s00220-020-03866-2.

Ansprechpartner: **Thorsten Neuschel**