Aktuelle Veranstaltungen

Kolloquium

Thema: **tba**

Datum: 31.05.21

Uhrzeit: 16:15

Ort: cyberspace

Vortragender: Dima Kharzeev

Stony Brook University

Inhalt:

Ansprechpartner: F. Karsch/TR211

Kolloquium Mathematische Physik

Thema: **20210723 - Jon Keating - TBC**

Datum: 23.07.21

Uhrzeit: 16:15

Ort: ZOOM/Konferenzschaltung

Vortragender: Jon Keating

Oxford University

Inhalt: TBC

Ansprechpartner: G. Akemann

Seminar Hochenergiephysik

Thema: **Is Our Universe the Remnant of Chiral Anomaly in Inflation?**

Datum: 27.04.21

Uhrzeit: 14:15

Ort: Online, via ZOOM

Vortragender: Azadeh Maleknejad

CERN, Geneva

Inhalt: Modern cosmology has been remarkably successful in describing the Universe from a second after the Big Bang until today. However, its physics before that time is still much less certain. It profoundly involves particle theory beyond the Standard Model to explain long-standing puzzles: the origin of the observed matter asymmetry, nature of dark matter, massive neutrinos, and cosmic inflation. In this talk, I will explain that a new framework based on embedding axion-inflation in left-right symmetric gauge extensions of the SM can possibly solve and relate these seemingly unrelated mysteries of modern cosmology. The baryon asymmetry and dark matter today are remnants of a pure quantum effect (chiral anomaly) in inflation which is the source of CP violation in inflation. As a smoking gun, this setup has robust observable signatures for the GW background to be probed by future CMB missions and laser interferometer detectors.

Ansprechpartner: D. Bödeker

Seminar Kondensierte Materie

Thema: **Interaction of slow highly charged ions with freestanding short-range ordered organic nanosheets and crystalline 2D materials - from fundamental processes to applications in structural analysis**

Datum: 07.05.21

Uhrzeit: 14:15

Ort: ZOOM / Konferenzschaltung

Vortragender: Richard Wilhelm

TU Wien

Inhalt: Heavy ions with low velocity and in high charge states undergo a complex set of neutralization and de-excitation processes when interacting with solid surfaces. While charge transport from a surface to the ion leading to the neutralization is well described by a classical over-barrier process, the subsequent de-excitation of the projectile involves radiative and non-radiative channels. As it turns out, one particular non-radiative two-center energy transfer channel (Interatomic Coulombic Decay, ICD) dominates under certain conditions and it can be well-described in terms of the exchange of virtual photons between surface and ion. Employing the interatomic distance dependence of the ICD process allows us to link a specific charge exchange to a scattering angle of the ion, i.e. a specific trajectory. Consequently, angle-resolved charge exchange spectroscopy of slow highly charged ions can be used as a characterisation tool for short-range ordered organic nanosheets in the limit of small material thicknesses. The method will be presented and its limitations discussed.

Ansprechpartner: Jürgen Schnack

Seminar Mathematische Physik

Thema: **The Character Expansion in effective Theories for chiral Symmetry Breaking**

Datum: 03.12.20

Uhrzeit: 16:30

Ort: ZOOM / Konferenzschaltung

Vortragender: Noah Aygün

Universität Bielefeld

Inhalt:

Ansprechpartner: Gernot Akemann

Seminar Bielefeld-Melbourne Zufallsmatrizen

Thema: **Spherical Integrals and rare events in Random Matrix Theory**

Datum: 12.05.21

Uhrzeit: 09:00

Ort: ZOOM / Konferenzschaltung

Vortragender: Alice Guionnet

ENS Lyon

Inhalt: Spherical integrals as the HCIZ integral can be thought as Fourier transforms in RMT, and their asymptotics useful to capture the probability of rare events in random matrix theory. In this talk, I will discuss how to study the asymptotics of the HCIZ integral and the rectangular spherical integral by studying large deviations for Dyson Brownian motion and how this can be used to study the probability that the spectral measure of the matrix A+UBU* takes an unexpected value. This talk is based on a old work with O. Zeitouni, and recent work with S. Belinschi and J. Huang as well as a work in progress with J. Huang.

Ansprechpartner: Anas Rahman