

Aktuelle Veranstaltungen

Kolloquium

Thema: tba

Datum: 14.10.19

Uhrzeit: 16:15

Ort: H6

Vortragender: [Prof. Dr. Christine Silberhorn](#)

Universität Paderborn

Inhalt:

Ansprechpartner: [W. Pfeiffer](#)

Kolloquium Mathematische Physik

Thema: [Counting bound states: From Weyl to Maximal Fourier Multipliers](#)

Datum: 05.07.19

Uhrzeit: 16:15

Ort: V2-200

Vortragender: Dirk Hundertmark

KIT

Inhalt: Deriving precise estimates for bound states has a long history. It ranges from Rayleigh's theory of sound and Weyl's asymptotic to more detailed questions concerning the eigenvalue distribution of Schrödinger operators. We will give a personally biased sketch of some of the history and discuss some new results, including the somewhat surprising fact how tools from harmonic analysis - so-called maximal Fourier multiplier bounds - can help in counting bound states.

Ansprechpartner: [B. Gentz](#)

Seminar Hochenergiephysik

Thema: [The Large-scale Structure of our Universe with Radio galaxies](#)

Datum: 20.09.19

Uhrzeit: 14:15

Ort: D6-135

Vortragender: [Prabhakar Tiwari](#)

NAOC Beijing

Inhalt: The "Cosmological Principle" assumes homogeneity and isotropy at large distance scales. This is a fundamental assumption in our standard cosmological framework and therefore must be tested explicitly by observations. In this talk, I will review some great (bizarre, famous, significant!) observations of large scale isotropy/anisotropy achieved by employing radio galaxy surveys. In particular I will present the radio galaxy number count dipole and the latest dipole/quadruple/octopole alignment results from NVSS+SUMSS catalogs. I will discuss a few more observations of large scale isotropy/anisotropy and the existing theoretical proposals to explain these. At present there are several major radio galaxy observations available e.g. LOFAR surveys, TGSS, GLEAM etc. and we have a lot to explore from these observations, later on we are going to have Square Kilometre Array (SKA) observations. With SKA all radio physics is going to benefit immensely, will discuss how much improvement we are expecting to have on isotropy/anisotropy observations with upcoming SKA observations.

Ansprechpartner: [D. Schwarz](#)

Seminar Kondensierte Materie

Next-neighbor particle-particle interaction of fermions in quasi-one-dimensional flat-band lattices

Thema:

Datum: 22.07.19

Uhrzeit: 14:15

Ort: D5-153

Vortragender: Simon Tilleke

Bielefeld University

Inhalt:

Ansprechpartner: [Thomas Dahm](#)

Seminar Mathematische Physik

Critical behaviour and characteristic polynomials of non-Hermitian random matrices

Thema:

Datum: 23.05.19

Uhrzeit: 16:15

Ort: D5-153

Vortragender: [Nicholas Simm](#)

University of Sussex

Inhalt:

I will discuss some recent developments regarding the normal matrix model. In particular my interest will be in certain critical models where the limiting support of the eigenvalues can radically change its topology by slightly adjusting an external parameter. I will discuss how aspects of the model can be explicitly mapped to the study of expectations of characteristic polynomials of non-Hermitian random matrices (e.g. Ginibre or truncated unitary). Many of these averages are related to Painlevé transcendents, and by exploiting this, a precise and non-trivial asymptotic expansion of

partition functions can be calculated in the critical models. This is joint work with Alfredo Deaño (University of Kent).

Ansprechpartner: [Gernot Akemann](#)

Seminar AG Zufallsmatrizen

Thema: [Eigenvalue Spacings of Random Matrices compared to Locations of Buzzard Nests](#)

Datum: 04.07.19

Uhrzeit: 14:15

Ort: D5-153

Vortragender: Rebecca Werdehausen

Bielefeld University

Inhalt: The territorial behavior of buzzards suggests a repulsion between the nests that may match with the repulsion between complex eigenvalues of non-hermitian random matrices. The Ginibre ensemble and the nearest neighbor spacings of the two-dimensional eigenvalues will be introduced and compared to the Poissonian Process in the plane. Then we will calculate the spacings between buzzard nests and the Kolmogorov distance to both theoretical curves. For this aim, the unfolding of the data set is indispensable, so that areas of high human settlement do not influence the spacing statistics. Two different unfolding methods in 2D will be tested and applied.

Ansprechpartner: [Gernot Akemann](#)