

# Aktuelle Veranstaltungen

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## Kolloquium

**Thema:** [Black holes & spin-offs](#)

**Datum:** 24.06.19

**Uhrzeit:** 16:15

**Ort:** H6

**Vortragender:** [Katherine Blundell](#)

University of Oxford

**Inhalt:** The popular notion of a black hole "sucking in everything" from its surroundings only happens very close to a black hole. Far away, the pull of the black hole is identical to that of anything else of the same mass. However, black holes do give rise to many remarkable phenomena such as extragalactic quasars and, in our own Galaxy, microquasars. This is because gravity is not the only law of physics that must be obeyed. Matter can be spun off from near black holes in the form of winds and jets that spread through their surroundings and thus cause black holes to have tremendous cosmic influence many light years beyond their event horizons. I will describe various approaches that I employ to investigate these phenomena, and their spin-offs.

**Ansprechpartner:** [J. Schnack](#)

## Kolloquium Mathematische Physik

**Thema:** [tba](#)

**Datum:** 05.07.19

**Uhrzeit:** 16:15

**Ort:** V3-204

**Vortragender:** Dirk Hundertmark

KIT

**Inhalt:**

**Ansprechpartner:** [M. Baake](#)

## **Seminar Hochenergiephysik**

**Thema:** tba

**Datum:** 09.07.19

**Uhrzeit:** 14:15

**Ort:** D6-135

**Vortragender:** [Karl Jansen](#)

DESY Zeuthen

**Inhalt:**

**Ansprechpartner:** [W. Unger](#)

## **Seminar Kondensierte Materie**

**Thema:** [tba](#)

**Datum:** 04.07.19

**Uhrzeit:** 14:15

**Ort:** D5-153

**Vortragender:** Rebecca Werdehausen

Bielefeld University

**Inhalt:**

**Ansprechpartner:** [Gernot Akemann](#)

## Seminar Mathematische Physik

**Thema:** [Critical behaviour and characteristic polynomials of non-Hermitian random matrices](#)

**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:** [Non-Hermitian matrices: critical behaviour and asymptotics](#)

**Datum:** 19.06.19

**Uhrzeit:** 16:15

**Ort:** V3-201

**Vortragender:** [Alfredo Deano](#)

University of Kent

**Inhalt:** In this talk we present some recent work on the large  $N$  asymptotic behavior of the partition function for  $N \times N$  non-Hermitian random matrices, in particular Ginibre ensemble with added algebraic singularities. This model is motivated by the study of normal random matrix ensembles with rotational symmetry in the complex plane. In suitable double scaling regimes, when these singularities are allowed to merge or collide with the boundary of the limit support of the equilibrium measure, we also investigate the appearance of Painlevé transcendents, in analogy with the case of Hermitian ensembles. This is joint work with Nick Simm (University of Sussex)

**Ansprechpartner:** [Gernot Akemann](#)