

# Aktuelle Veranstaltungen

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## Kolloquium

**Thema:** Nobel Prize 2020: (super)massive black holes in our Galaxy

**Datum:** 11.10.21

**Uhrzeit:** 16:15

**Ort:** cyberspace

**Vortragender:** [Prof. Joris Verbiest](#)

Bielefeld University

**Inhalt:**

**Ansprechpartner:** [Dekan](#)

## Kolloquium Mathematische Physik

**Thema:** [Random matrices, spin glasses, and machine learning](#)

**Datum:** 23.07.21

**Uhrzeit:** 16:15

**Ort:** ZOOM/Konferenzschaltung

**Vortragender:** [Jon Keating](#)

Oxford University

**Inhalt:** I will describe some problems relating to machine learning and their connections to random matrix theory and spin glasses. These connections give a mathematical framework for understanding in qualitative terms the effectiveness of certain algorithms that are important in machine learning, but developing them into precise models remains a major challenge. I will reflect on the different roles played by models in computer science and physics, focussing on those involving random matrices.

**Ansprechpartner:** [G. Akemann](#)

## Seminar Hochenergiephysik

**Thema:** [Machine Learning for Thermodynamic Observables in Lattice Field Theories](#)

**Datum:** 06.07.21

**Uhrzeit:** 14:15

**Ort:** Online, via ZOOM

**Vortragender:** [Lena Funcke](#)

Perimeter Institute, Ontario, Canada

**Inhalt:** In this talk, I will discuss how applying machine learning techniques to lattice field theory is a promising route for solving problems where Markov Chain Monte Carlo (MCMC) methods are problematic. More specifically, I will show that deep generative models can be used to estimate thermodynamic observables like the free energy, which contrasts with existing MCMC-based methods that are limited to only estimate free energy differences. I will demonstrate the effectiveness of the proposed method for two-dimensional  $\phi^4$  theory and compare it to MCMC-based methods in detailed numerical experiments.

**Ansprechpartner:** [G. Endrödi](#)

## Seminar Kondensierte Materie

**Thema:** **Der Groveralgorithmus auf einem universellen Quantencomputer - Nur eine Simulation oder tatsächlich umsetzbar?**

**Datum:** 20.07.21

**Uhrzeit:** 10:15

**Ort:** ZOOM / Konferenzschaltung

**Vortragender:** [Momme Hengstenberg](#)

Universität Bielefeld

**Inhalt:**

**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:** **20211006 - Yacin Ameur**

**Datum:** 06.10.21

**Uhrzeit:** 09:00

**Ort:** ZOOM / Konferenzschaltung

**Vortragender:** [Yacin Ameer](#)

Lund University

**Inhalt:** TBC

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