

# Aktuelle Veranstaltungen

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## Kolloquium

**Thema:** Vorstellung der Arbeitsgruppen

**Datum:** 22.10.18

**Uhrzeit:** 16:15

**Ort:** H6

**Vortragender:** Arbeitsgruppen der Physik

**Inhalt:**

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

## Kolloquium Mathematische Physik

**Thema:** [Upper and lower Lipschitz bounds for the perturbation of edges of the essential spectrum](#)

**Datum:** 01.06.18

**Uhrzeit:** 14:15

**Ort:** V3-204

**Vortragender:** [Ivan Veselic](#)

TU Dortmund

**Inhalt:**

Let  $A$  be a selfadjoint operator,  $B$  a bounded symmetric operator and  $A+tB$  a perturbation. I will present upper and lower Lipschitz bounds on the function of  $t$  which locally describes the movement of edges of the essential spectrum. Analogous bounds apply also for eigenvalues within gaps of the essential spectrum. The bounds hold for an optimal range of values of the coupling constant  $t$ . This result is applied to Schrodinger operators on unbounded domains which are perturbed by a non-negative potential which is mostly equal to zero. Unique continuation estimates nevertheless ensure quantitative bounds on the lifting of spectral edges due to this semidefinite potential. This allows to perform spectral engineering in certain situations. The talk is based on the preprint <https://arxiv.org/abs/1804.07816>

Ansprechpartner: [G. Akemann](#)

## Seminar Hochenergiephysik

Thema: [Gravitational waves from first order phase transitions](#)

Datum: 23.10.18

Uhrzeit: 14:15

Ort: D6-135

Vortragender: [Stephan Huber](#)

Univ. of Sussex, Brighton

**Inhalt:**

I will discuss phase transitions at the TeV scale, in particular the electroweak one (in extensions of the standard model). I will review the current status of how gravitational waves are generated during the phase transition, and show how the resulting gravitational wave signal can be computed from key properties of the transition. Finally, I will discuss detection prospects at future interferometers, such as LISA.

Ansprechpartner: [D. Bödeker](#)

## Seminar Kondensierte Materie

Thema: [Miniworkshop](#)

**Datum:** 23.10.18

**Uhrzeit:** 13:59

**Ort:** D5-153

**Vortragender:** Experten

aus Bielefeld, Magdeburg, Osnabrück

**Inhalt:** 14:00 -- 14:45, Johannes Richter, The challenge of highly frustrated quantum magnets at finite temperatures 14:45 -- 15:15, Tjark Heitmann, Exakte Diagonalisierung von isotropen Heisenberg-Spinringen mit Translationssymmetrie 15:15 -- 15:45, Robin Heveling, Density Matrix Renormalization Group at Finite Temperatures \textbf{15:45 -- 16:00, Kaffeepause} 16:00 -- 16:45, Robin Steinigeweg, Dynamical quantum typicality: Application to Heisenberg spin chains at finite temperatures 16:45 -- 17:30, Heinz-Jürgen Schmidt, The adiabatic regime of a periodically driven two-level system

**Ansprechpartner:** [Jürgen Schnack](#)

## Seminar Mathematische Physik

**Thema:** [Symmetry Transition from GUE to chGUE protecting Chirality](#)

**Datum:** 12.07.18

**Uhrzeit:** 14:15

**Ort:** D5-153

**Vortragender:** Mario Kieburg

Bielefeld University

Symmetry transitions of systems have been always of particular interest in physics. There are only few real systems, that are pure and ideal yielding the desired results predicted by simplified, analytically feasible models. This is also the case for the spectral statistics of linear operators corresponding to such realistic systems, which are usually described by random matrices. Especially the global symmetries can be well-captured by random matrices, since the local spectral statistics on the level of the mean level spacing is extremely sensitive to these symmetries. Therefore, the question

**Inhalt:** arises what the statistics would look like when a symmetry transition takes place to compare these results efficiently with physical measurements. Exactly this has been the goal of my joint work with Takuya Kanazawa when we studied an interpolation between the Gaussian unitary ensemble (GUE) and the chiral Gaussian unitary ensemble (chGUE) while protecting the chirality of the matrix. This transition is motivated by several QCD applications. Particularly the protection of the chirality leads to surprising effects. I am going to report on these results which comprise finite matrix size as well as the limit of large matrix dimensions.

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

## Seminar AG Zufallsmatrizen

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

**Datum:** 31.10.18

**Uhrzeit:** 16:15

**Ort:** V3-201

**Vortragender:** Markus Epke

Bielefeld University

**Inhalt:**

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