

Aktuelle Veranstaltungen

Kolloquium

Thema: [Gravitational Wave Astronomy](#)

Datum: 30.04.18

Uhrzeit: 16:15

Ort: H6

Vortragender: [Prof. Dominik Schwarz](#)

Bielefeld University

Inhalt: The 2017 Nobel Prize in Physics was awarded "for decisive contributions to the LIGO detector and the observation of gravitational waves" back in 2015. Those gravitational waves are believed to origin from a black hole-black hole merger. On October 16, 2017 the LIGO/VIRGO collaboration announced the discovery of a neutron star-neutron star merger, observed simultaneously by means of gravitational waves (GW170817) and as a gamma-ray burst (GRB170817A) and its afterglow across the electromagnetic spectrum. This event marks the beginning of a new era in astronomy and physics: gravitational wave astronomy. This colloquium will provide a brief introduction into the physics of gravitational waves, the interferometric detection technique, and summarise the discoveries so far. Then I will explain how gravitational waves can test general relativity and its alternatives and will explain how, within that day in October 2017, the theoretical community started to realise that the simultaeous observation of a gravitational wave and a gamma-ray burst killed several classes of alternative models of gravity within a few seconds. Finally, I will briefly touch on how the Bielefeld research activities fit it.

Ansprechpartner: [D. Schwarz](#)

Kolloquium Mathematische Physik

Thema: tba

Datum: 18.05.18

Uhrzeit: 16:15

Ort: U2-222

Vortragender: Thomas Kriecherbauer
Universität Bayreuth

Inhalt:

Ansprechpartner: [G. Akemann](#)

Seminar Hochenergiephysik

Thema: tba

Datum: 10.07.18

Uhrzeit: 14:15

Ort: D6-135

Vortragender: Jens Mund
UFJF, Juiz de Fora, Brazil

Inhalt:

Ansprechpartner: [F. Karsch](#)

Seminar Kondensierte Materie

Thema: [Irreversibility in active matter systems: Fluctuation theorem and mutual information](#)

Datum: 04.05.18
Uhrzeit: 14:15
Ort: D5-153
Vortragender: Lennart Dabelow

Universität Bielefeld

Inhalt:

Ansprechpartner: [Peter Reimann](#)

Seminar Mathematische Physik

Thema: [Eigenvector-related correlation functions and their connection with generalized chiral random matrix ensembles with a source](#)

Datum: 11.01.18

Uhrzeit: 16:00

Ort: D5-153

Vortragender: Jacek Grela

LPTMS Université Paris-Sud

Inhalt: We will introduce eigenvector-related correlation functions, discuss briefly their significance in dynamical Ginibre ensemble [1,2] and present asymptotic results in the large matrix size limit. Motivated by recent work [3] on joint eigenvector-eigenvalue correlation function valid for finite matrix size N in the complex and real Ginibre Ensembles, we study integrable structure of a certain generalized chiral Gaussian Unitary Ensemble with a source [4]. This model can be also interpreted as a deformation of the complex Ginibre Ensemble with an external source with additional determinant term. We present compact formulas for the characteristic polynomial, inverse characteristic polynomial and the kernel. In the case of a special source, we calculate asymptotics in the joint "bulk-edge" regime of all aforementioned objects and show their Bessel-type behaviour. References: [1] "Dysonian dynamics of the Ginibre

ensemble", Z. Burda, J. Grela, M. A. Nowak, W. Tarnowski, P. Warcho?, Phys. Rev. Lett. 113, 104102 (2014) [2] "Unveiling the significance of eigenvectors in diffusing non-hermitian matrices by identifying the underlying Burgers dynamics", Z. Burda, J. Grela, M. A. Nowak, W. Tarnowski, P. Warcho?, Nucl. Phys. B 897, 421 (2015) [3] "On statistics of bi-orthogonal eigenvectors in real and complex Ginibre ensembles: combining partial Schur decomposition with supersymmetry", Y. V. Fyodorov, arXiv:1710.04699 [4] "On characteristic polynomials for a generalized chiral random matrix ensemble with a source", Y. V. Fyodorov, J. Grela, E. Strahov, arXiv:1711.07061

Ansprechpartner: [Gernot Akemann](#)

Seminar AG Zufallsmatrizen

Thema: [TASEP, RMT and emerging spectra of correlation matrices](#)

Datum: 02.05.18

Uhrzeit: 16:15

Ort: V3-201

Vortragender: Paulino Monroy Castillero

Cuernavaca

Inhalt: I will talk about a particular analysis of the Totally Asymmetric Simple Exclusion Process (TASEP) as a time series. I will show some properties of the correlation structure for different non-equilibrium steady states. Also I will talk about the use of the power map and emerging spectra as a tool to analyze short time series and particular examples based on TASEP

Ansprechpartner: [Gernot Akemann](#)