Upcoming Events

Colloquium

Topic: tba
Date: 16.04.18
Time: 16:15
Place: H6
Guest: Prof. Hervé Rigneault
Institut Fresnel, Marseille

Abstract:

Contact person: T. Huser

Colloquium Mathematical Physics

Topic: Mesoscopic eigenvalue correlations of random matrices
Date: 01.12.17
Time: 16:00
Place: V2-210/216
Guest: Antti Knowles
University of Geneva
Ever since the pioneering works of Wigner, Gaudin, Dyson, and Mehta, the correlations of eigenvalues of large random matrices on short scales have been a central topic in random matrix theory. On the microscopic spectral scale, comparable with the typical eigenvalue spacing, these correlations are now well understood for Wigner matrices thanks to the recent solution of the Wigner-Gaudin-Dyson-Mehta universality conjecture. In this talk I focus on eigenvalue density-density correlations between eigenvalues whose separation is much larger than the microscopic spectral scale; here the correlations are much weaker than on the microscopic scale. I discuss to what extent the Wigner-Gaudin-Dyson-Mehta universality remains valid on such larger scales, for Wigner matrices and random band matrices.

Contact person:  
G. Akemann

Seminar High Energy Physics

Topic:  
Sign problem and diagrammatic representation of scalar vs. real QCD

Date:  
01.03.18

Time:  
14:15

Place:  
D6-135

Guest:  
Falk Bruckmann

Univ. Regensburg

We discuss representations of lattice field theories in terms of diagrams of dual variables (occupation numbers). Our main motivation is the nonzero density sign problem which can be solved through this approach in various systems. As a start we will dualize two-dimensional sigma models (which are asymptotically free and generate a dynamical mass, as does QCD) and present some numerical results on the phase diagram. In the second part we will present a dualization of QCD with scalar quarks, where the sign problem is solved, too. Finally a comparison to real QCD will be made.

Contact person:  
W. Unger

Seminar Condensed Matter
**Brownian motion of an ellipsoidal particle in a tilted periodic potential: long-term velocity and diffusion**

Date: 22.02.18
Time: 14:15
Place: D5-153
Guest: Ralf Eichhorn
NORDITA, Stockholm

Abstract:

**Seminar Mathematical Physics**

**Eigenvector-related correlation functions and their connection with generalized chiral random matrix ensembles with a source**

Date: 11.01.18
Time: 16:00
Place: D5-153
Guest: Jacek Grela
LPTMS Université Paris-Sud

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

Contact person: Gernot Akemann

Seminar AG Zufallsmatrizen

Topic: tba

Date: 27.03.18

Time: 14:15

Place: D5-153

Guest: Udaysinh Bhosale

Indian Institute of Science, Education and Research

Abstract:

Contact person: Gernot Akemann