

# Workshop on "Many-body theory, random operators & matrices"

Institut Mittag-Leffler 8 – 12 April, 2019

*Venue: Kuskvillan Seminar Hall, Wallenbergsalen*

## Monday

10:00 -11:00 Graf: Indirect Measurements of a Harmonic Oscillator

11:00 -12:00 Joye: Lower Bounds on the Localisation Length of Balanced Random Quantum Walks

14:30 -15:30 Panati: Quantum Spin Hall transport: Kubo formula and beyond

15:30 -16:30 Schulz-Baldes: Spectral flow of monopole insertion in topological insulators

17:00 -18:00 Ueltschi: Extremal states decomposition in quantum spin systems

## Tuesday

09:00 -10:00 Bachmann: Quantized charge transport in a many-body setting

10:00 -11:00 De Roeck: Dynamical localization beyond the high-frequency regime

11:30 -12:30 Nachtergaele: Slow propagation in some disordered spin chains

14:30 -15:30 Stolz: Area laws for the disordered Ising and XXZ spin chains: Beyond the droplet spectrum

15:30 -16:30 Müller: How much delocalisation is needed for an enhanced area law of the entanglement entropy?

17:00 -18:00 Schenker: Localization (and resonant delocalization?) for a disordered polaron

## Wednesday

09:00 -10:00 Mastropietro: Persistence of gaps in the interacting anisotropic Hofstadter model

10:00 -11:00 Karpeshina: Multiscale Analysis in the space of momenta

11:30 -12:30 Shamis: Applications of the Ky Fan inequality to random (and almost periodic) operators

16:00 -16:30 Soosten: Localization and delocalization for ultrametric random matrices

16:35 -17:05 Dietlein: Poisson local eigenvalue statistics for continuum random Schrödinger operators

17:30 -18:00 Fischbacher: Entanglement entropy for the higher spin XXZ model

## Thursday

09:00 -10:00 Knowles: Mesoscopic eigenvalue correlations of Wigner matrices

10:00 - 11:00 Schnell: Local laws for additive random matrix models

11:30 - 12:30 Johansson: Intermediate random matrix ensembles

14:00 - 15:00 Duits: Global fluctuations for (time-dependent) polynomial ensembles

15:00 - 16:00 Bauerschmidt: Geometry of random walk isomorphisms

16:30 - 17:30 Sabot: The Edge reinforced random walk, its non-reversible counterpart, and random Schrödinger operators

17:30 -19:00 Wine and cheese (*Main building*)

## Friday

09:00 -10:00 Sodin: Some applications of the change of variables  $t \mapsto \sqrt{t}$

10:00 - 11:00 Imbrie: Smoothing of eigenvalue distributions for quantum systems with discrete disorder

11:30 -12:30 Klopp: Exponential decay for the 2 particle density matrix of disordered many-body fermions at zero and positive temperature

Free Afternoon