

Programme on
“Quantum Paths”
April 9 – June 8, 2018

organized by

Pasquale Calabrese (SISSA, Trieste), Fabian H. L. Essler (Oxford U),
Giuseppe Mussardo (SISSA, Trieste), Jörg Schmiedmayer (TU Vienna),
German Sierra (IFT Madrid), Frank Verstraete (U Vienna)

Conference on “Quantum Paths in Low Dimensions: Theory and Experiment”
April 9 – 13, 2018

• **Monday, April 9, 2018**

09:00 – 09:30 **Registration**

09:30 – 10:30 **Ignacio Cirac**

Tensor networks: fundamental theorems and applications

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 12:00 **Frank Verstraete**

Continuous variational matrix product states for quantum field theories

12:00 – 14:00 *Lunch Break*

14:00 – 15:00 **Jens Eisert**

Quantum simulators probing the non-equilibrium

15:00 – 15:30 *Coffee / Tea Break*

15:30 – 16:30 **Markus Oberthaler**

Spin-1 many-body system: Einstein Podolsky Rosen Correlations & Universal Time Dynamics

• **Tuesday, April 10, 2018**

09:00 – 10:00 **Dan Stamper-Kurn**

Interacting bosonic atoms in triangular lattices with varying geometry

10:00 – 10:30 *Coffee / Tea Break*

10:30 – 11:30 **Jürgen Berges**

Universality far from equilibrium and entanglement entropy

11:30 – 12:30 **Andreas Läuchli**

Quantum Criticality in iMPS & iPEPS Tensor Network Methods

12:30 – 14:00 *Lunch Break*

14:00 – 15:00 **Francesca Ferlino**

Observation of Roton Modes in an Erbium Dipolar quantum gas

15:00 – 15:30 *Coffee / Tea Break*

15:30 – 16:30 **Dimitry Abanin**

Quantum many-body scars: a new mechanism of ergodicity breaking

- **Wednesday, April 11, 2018**

09:00 – 10:00 **Ulrich Schneider**

Ultracold atoms in low-dimensional quasi-periodic potentials

10:00 – 10:30 *Coffee / Tea Break*

10:30 – 11:30 **Eugene Demler**

Quench and Floquet dynamics in solid state systems and ultracold atoms

11:30 – 12:30 **Bruno Bertini**

Transport in Closed One-Dimensional Systems: Integrable Models and Universality at Low Temperatures

12:30 – 14:00 *Lunch Break*

14:00 – 15:00 **Adam Nahum**

Emergent statistical mechanics of entanglement in random unitary circuits

15:00 – 15:30 *Coffee / Tea Break*

15:30 – 16:30 **Jean-Sebastien Caux**

Quench, Hydro and Floquet dynamics in solvable many-body quantum systems

- **Thursday, April 12, 2018**

09:00 – 10:00 **Hanns-Christoph Nägerl**

Impurity dynamics in 1D for strong interactions: Bloch oscillations in the absence of a lattice

10:00 – 10:30 *Coffee / Tea Break*

10:30 – 11:30 **Rosario Fazio**

Finite frequency criticality and time-crystals

11:30 – 12:30 **Denis Bernard**

Curiosities in monitoring quantum systems (in or out-of-equilibrium)

12:30 – 14:00 *Lunch Break*

14:00 – 15:00 **Lukasz Fidkowski**

Fermionic symmetry protected phases via 2+1d bosonization

15:00 – 15:30 *Coffee / Tea Break*

15:30 – 16:30 **Robert Konik**

Rare States and Anomalous Thermalization in the 1D and 2D Quantum Ising Model

- **Friday, April 13, 2018**

09:00 – 10:00 **Zoran Hadzibabic**

Bose gases quenched to unitarity

10:00 – 10:30 *Coffee / Tea Break*

10:30 – 11:30 **Sandro Stringari**

Propagation of sound in two-dimensional Bose gases

11:30 – 12:30 **Tin-Lun Ho**

Monopoles and Instantons in Cold Atoms

12:30 – 14:00 *Lunch Break*

14:00 – 15:00 **Jörg Schmiedmayer**

Relaxation, (pre-) thermalization and revivals in (nearly) integrable systems: an experimental perspective

15:00 – 15:30 *Coffee / Tea Break*

All talks take place at ESI, Boltzmann Lecture Hall!