

Programme on
“Quantum Simulation - from Theory to Application”

September 2 – October 31, 2019

organized by

Tommaso Calarco (Forschungszentrum Jülich), Wolfgang Lechner (U Innsbruck, IQOQI), Jörg Schmiedmayer (TU Vienna), Philip Walther (U Vienna)

Conference “Quantum Simulation”

September 2 – 5, 2019

• **Tuesday, September 3, 2019**

09:00 – 10:00 **Maksym Serbyn**

Quantum many-body scars in Rydberg-atom quantum simulator

10:00 – 11:00 **Jens Eisert**

Quantum advantages of quantum simulators

11:00 – 12:00 **Talks/Discussions**

12:30 – 14:00 *Lunch break*

14:00 – 15:00 **Peter Rabl**

Quantum simulation of non-perturbative effects in (cavity) QED

15:00 – 15:30 *Coffee / Tea break*

15:30 – 16:30 **Robert Zeier**

Symmetry criteria for quantum simulability of effective interactions

• **Wednesday, September 4, 2019**

09:00 – 10:00 **Wolfgang Lechner**

Quantum Optimization

10:00 – 11:00 **Maxime Favier**

Towards quantum simulation with laser-trapped circular Rydberg atoms

11:00 – 12:30 **Talks/Discussions**

12:30 – 14:00 *Lunch break*

14:00 – 15:00 **Sebastian Erne**

Universal dynamics far from equilibrium

15:00 – 15:30 *Coffee / Tea break*

15:30 – 16:30 **Discussions**

- **Thursday, September 5, 2019**

09:00 – 10:00 **Wolfgang Duer**

Influence of noise on quantum metrology (and ways around)

10:00 – 11:00 **Christian Kokail**

Variational Quantum Simulation and Verification

11:00 – 12:30 **Talks/Discussions**

12:30 – 14:00 *Lunch break*

14:00 – 15:00 **Jörg Schmiedmayer**

Emergent quantum simulators

15:00 – 15:30 *Coffee / Tea break*

15:30 – 16:30 **Discussions**

All talks take place at ESI, Boltzmann Lecture Hall!