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 Computing in Near Term"

October 21 – 25, 2019

- **Monday, October 21, 2019**

  11:00 – 12:00 **Kenji Ohmori** (Institute for Molecular Science, Okazaki)
  Ultrafast many-body electron dynamics in an ultracold atomic BEC and Mott insulator lattice

  12:00 – 14:00 *Lunch break*

- **Tuesday, October 22, 2019**

  11:00 – 11:45 **Clemens Dlaska** (University of Innsbruck)
  Designing ground states of Hopfield networks for quantum state preparation

  11:45 – 12:30 **Philipp Aumann** (University of Innsbruck)
  Automated Design of Superconducting Circuits

  12:30 – 14:00 *Lunch break*

- **Wednesday, October 23, 2019**

  09:00 – 10:00 **Wojciech Roga** (National Institute of Information and Communications Technology, Tokyo)
  Compressive sensing, quantum annealing, and molecular vibronic spectroscopy

  10:00 – 11:00 **Bálint Koczor** (University of Oxford)
  Variational-State Quantum Metrology and Phase-Space Representations for Qubit and Qudit Systems

  11:00 – 11:30 *Coffee / Tea break*

- **Thursday, October 24, 2019**

  09:00 – 10:00 **Yi-Ping Huang** (Paul Scherrer Institute, Switzerland)
  Constrained many-body systems: emergent gauge symmetry in frustrated magnetism and constrained many-body dynamics

  10:00 – 11:00 **Oleksandr Kyriienko** (University of Exeter)
  Quantum inverse iteration algorithm for analogue quantum simulators

  11:00 – 11:30 *Coffee / Tea break*

All talks take place at ESI, Boltzmann Lecture Hall!