



CRC 1227
Designed Quantum States of Matter



GUEST LECTURE

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(Guest of Prof. P. Schmidt und Prof. K. Hammerer)

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DQ-mat Colloquium

13 January 2022, 1.00 pm

(via Zoom-Meeting)

"Quantum computing and the difficulty of simulating quantum many-body systems"

Quantum many-body systems are very hard to simulate, since computational resources (time and memory) typically grow exponentially with the system size.

However, quantum computers or analog quantum simulators may perform that task in a much more efficient way. In this talk, I will review some of the quantum algorithms that have been proposed for this task and then explain the advantages and disadvantages of analog quantum simulators. In particular, I will describe methods to simulate the dynamics, to find ground states, or compute physical properties at finite temperatures.

All DQ-mat members and all interested are cordially invited to attend.