



Einladung zum Vortrag

“Plant Materials Entanglement in Complex Quantum Systems: Mathematics, Physics, Computation”

Norbert Schuch

Max-Planck-Institute of Quantum Optics, Garching

Termin: Dienstag, 18.06.2019, 09:15 Uhr, Lehrprobe 10:30 Uhr

Ort: Internationales Erwin Schrödinger Institut für Mathematik und
Physik (ESI), Schrödinger-Hörsaal
9. Boltzmannngasse 9

Abstract:

Complex quantum systems, this is, quantum systems composed of many particles, play a key role in quantum physics: They appear in the study of condensed matter, quantum chemistry, and high energy systems, and at the same time, they underlie the power of quantum computers and quantum error correction. The rich variety of intricate phenomena they exhibit is deeply rooted in their complex quantum correlations, i.e., entanglement.

In my talk, I will discuss how Quantum Information, and in particular Entanglement Theory, allows us to obtain an in-depth understanding of these systems: First, it gives us the tools to understand the mathematical structure of their quantum correlations and the way in which they interplay with physical properties; second, it provides us with ways to both formally classify and to concretely investigate their physical ramifications, such as topological order and spin liquids; and third, it allows us to better utilize those systems as powerful resources for quantum computation and information.

Im Rahmen des Vortrages findet eine Lehrprobe zum Thema
“The concept of information in mathematics and physics” statt.

