



# Kolloquium Physik / TR211

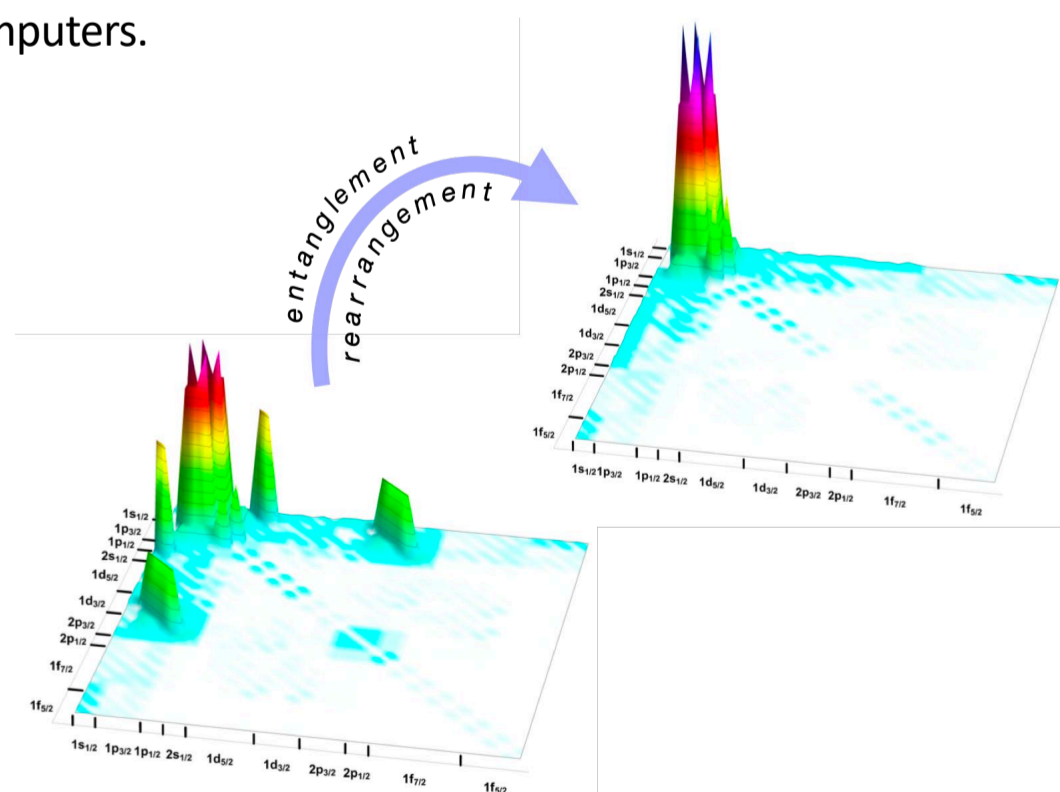
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### Quantum Information for the Nuclear Many-Body Problem

In the past years increasing effort has been devoted to re-examining quantum many-body systems from a quantum information point of view. In particular, there has been renewed interest in understanding the phenomenon of entanglement due to its essential role in quantum computing and potential guidance in formulating the many-body problem.

In this talk we discuss and investigate entanglement properties of nuclear systems, including exactly solvable models as well as light nuclei. We study how entanglement structures rearrange into localized regions of the Hilbert space through Hamiltonian transformations, and how these patterns can indicate the emergence of physical phenomena. We also explore how entanglement localization, together with physics-driven mappings to qubit or qudit systems, can be utilized to develop quantum simulations that efficiently leverage the potential of quantum computers.



Tuesday, May 23, 2023, 2:15 p.m.

H6