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## Entanglement, Complexity and Quantum Computations of Nuclear Many-Body Systems

Advances in quantum information science have provided new tools and concepts that shed further light on the structure and dynamics of quantum many-body systems and on the underlying forces that govern them. These new insights, together with cross-fertilization and exchange of ideas between fields, are enabling the development of improved methods and algorithms for simulating many-body physics.

I will discuss recent explorations of entanglement and quantum complexity in the structure of nuclei and their connection with the emergence of collectivity. The findings are further utilized to guide simulations of nuclear and related many-body systems, that leverage the potential of hybrid classical-quantum computing environments.

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