

Nuclear and particle physics on a quantum computer: Where do we stand now?

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Quantum computing and quantum simulations have long been proposed as fundamental new tools capable of disrupting advances in tackling outstanding problems which require exponential classical computing resources. The remarkable recent advances in the design and fabrication of quantum devices have spurred the interest in exploring the use of this new technology for practical applications. The nuclear and high-energy theory community has already begun efforts to design quantum computing algorithms for variety of relevant quantum many-body problems as well as testing these ideas on currently available platforms.

It is now a great time for the community to share the recent progress in this emerging field and establish a coherent vision of the outstanding questions to be addressed in the near future in order to fully capitalize on the rapid growth in quantum computing platforms.

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