Colloquium Series in Theoretical and Computational Physics Physics Department, University of Trieste





Introduction to Quantum Algorithms for Physics Applications

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Wednesday May 26th 2021 16:00-17:00

Zoom Meeting



Link: https://tinyurl.com/colloquiumquantum-algorithms Meeting ID: 956 7657 6295 Passcode: TheorPhys I will introduce basic concepts of quantum computation, highlighting the key properties of a typical quantum algorithm compared to its classical counterpart.

I will provide concrete examples of quantum primitives (i.e. hamiltonian simulation, quantum phase estimation) that will enable solving important physical problems (in quantum chemistry, electronic structure, or lattice gauge theories), with an exponential speedup, or that can be used in quantum machine learning for classification problems.

Finally, I will discuss challenges and prospects in achieving a practical quantum advantage in the near future.