

Colloqui della Classe di Scienze

Anno Accademico 2017/2018

Sala Azzurra | Palazzo della Carovana
Scuola Normale Superiore
Piazza dei Cavalieri, 7 - PISA

23 MAGGIO 2018
ore 15.00

FABRIZIO RENZI

Innovation, Research, University and Technical Director at IBM - Italia

IVANO TAVERNELLI

Theoretical Quantum Computing Technical Leader at IBM Research - Zurich

*IBM Q: building the first universal quantum computers
for business and science*

ABSTRACT:

We are at an exciting inflection point in quantum computing. The disciplines of quantum physics and quantum information science are mature to the point of producing a number of practical algorithms, and today's quantum computers are capable of providing a concrete implementation with which we can explore the possibilities of these techniques.

IBM has opened up real and simulated quantum computers for everyone to learn how to program in this new paradigm.

One of the promising applications for quantum computing is in Materials and Chemistry. With a quantum computer scientists and engineers expect to untangle the complexity of molecular and chemical interactions leading to the discovery of new materials and medicines, and model the quantum states of molecules. We will discuss the status of the applications in this space and share some recent activity.

Other potential application areas are Business Optimization, where a quantum computer can provide improved solutions to complex optimization problems found in supply chains, logistics, modeling financial data, and risk analysis, or Machine Learning / AI, for instance to speed up the training of classifiers or even build new types of systems..



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Info: Area Ricerca e Didattica - classi@sns.it