EPFL

PHYSICS COLLOQUIUM & QSE DISTINGUISHED LECTURE

A Quantum Future of Computing

Matthias Troyer
Technical Fellow and Corporate Vice President, Microsoft

Monday
December 12
12:30
Room CM 1 2

APERO after the colloquium

Organized by the Institute of Physics and the Centre for quantum science and engineering

IPHYS

Q-S-E

While still in early development, quantum computers are already overturning our notions of computing by promising to solve certain problems that are intractable on any imaginable classical computer. I will present simple guidelines identifying the promising quantum applications, which are in chemistry and materials science. First classically intractable academic simulations will need tens of thousands of qubits, but simulating molecules and materials with a classically unachievable precision will require more than a million qubits. While developing a qubit architecture able to reach that scale we can make progress on these challenging problems with novel machine learning approaches.

Host : giuseppe.carleo@epfl.ch

School of Basic Sciences